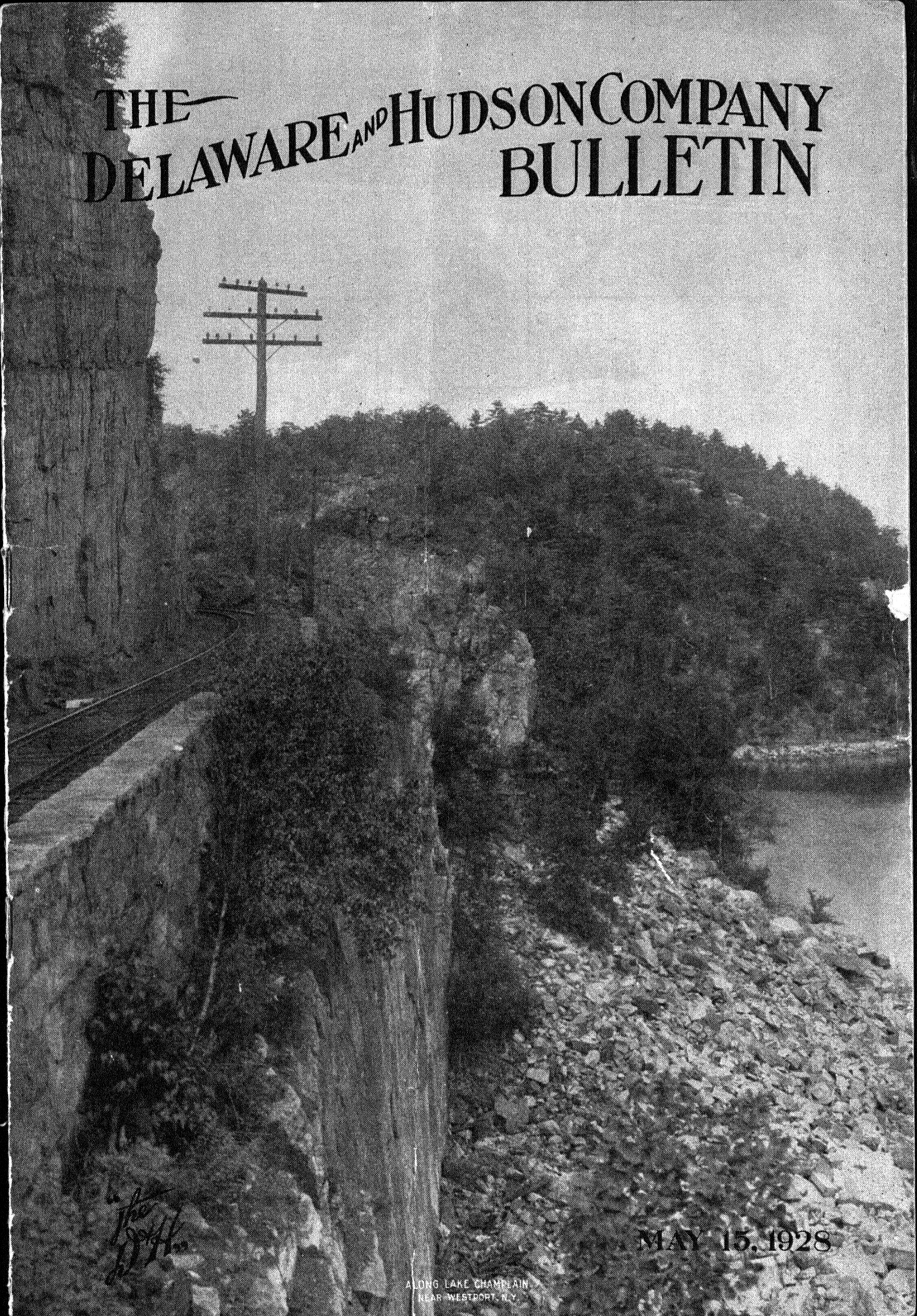
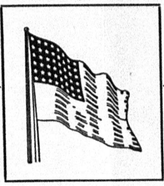
THE DELAWARE AND HUDSON COMPANY BULLETIN



ALONG LAKE CHAMPLAIN
NEAR WESTPORT, N.Y.

MAY 15, 1928



For Thee They Died

FOR thee their pilgrim swords were tried,
  Thy flaming word was in their scrips,
They battled, they endured, they died,
  To make a new Apocalypse.

Master and Maker, God of right
  The soldier dead are at Thy gate,
Who kept the spears of honor bright,
  And freedom's house inviolate.

JOHN DRINKWATER

The
DELAWARE AND HUDSON COMPANY
BULLETIN

Vol. 8 Albany, N. Y., May 15, 1928 No. 10

Far Away, Yet Here In Spirit

Cheerful Message Comes to Us From Far Off California Where Veteran Passenger Conductor is Enjoying the Aftermath of an Active Life

FROM sunny California our readers have received via *The Bulletin*, a heartening message from their old friend "BILL" BRADT. Not all knew him, of course, but as a member of the same great family of railroad men and women he is nevertheless the friend of all and, in turn, considers them as his friends. Moreover, whatever the lure of that renowned El Dorado country may be, its charm will never exceed that which The Delaware and Hudson has exerted over his life for something more than a half century.

WILLIAM L. BRADT

Before proceeding farther, permission is asked to formally introduce "BILL" as WILLIAM L. BRADT, of No. 54 Mar Vista Avenue, Pasadena, Cal., retired Susquehanna division passenger conductor. He was born at Duanesburg, Schenectady County, N. Y., May 11, 1854, the "middle man," as he likes to tell it in typical railroad parlance, in a family of eleven children of the late John M. and Jeanette Bradt. His father was for many years the station, ticket, freight and express agent, mail carrier, et cetera, at Duanesburg (now Duane). He entered the employ of the Company in December, 1872, as a brakeman, and his service was continuous until November 1, 1917, when his retirement became effective, or a total of forty-four years and eleven months.

"Bill's" retirement was brought about by failing eyesight. Six years ago he became totally blind. To many such an affliction would be a constant worry, but he bears his burden with good spirit. "The accompanying photograph," writes a friend who so kindly cooperated in getting this retrospect together, "indicates that his appetite remains good. His weight is about 220 pounds. Between regular callers, occasional visits from 'old time' friends, his radio and the hours out-of-doors basking in the brilliant California sunshine, the old chap is not having a bad time of it. Among his recent callers were 'Joe' Waldorf, agent at Richmondville; Spencer Courtright, retired Pennsylvania division conductor, who lives at Nineveh; and Oliver Davis, of Oneonta, a trainman on the Susquehanna division."

Early boyhood days were passed in the public school at Duanesburg and in the fields and woods thereabouts in vacation time, but at an early age he became a farm-hand. When but eighteen years old he got his first railroad job as a brakeman on a "wild-cat" train running between Albany and Oneonta, at, his correspondent says, "the munificent pay of $40 a month. There were no regular hours in those days, and work or loaf the pay was $40. After a while 'wild-cat' trains became known as extras, but it was a long time before the monthly pay was changed. There was great jubilation when it was made $45."

"Railroading fifty years ago," "Bill" recalls, "was vastly different from what it is at present and 'so crude.' The coal jimmies or dumps, as the little coal cars (predecessors of the gondola) were known, were outstanding examples. Coupled by hook and link, they were terrible things to have scattered through a train—terrifying to the brakeman who had to climb over or get in between them for coupling purposes. Neither was there any double track, but, instead, a third rail as both broad and narrow gage cars were handled in the same train in that remote period, and all brakes were set by hand. The freight brakeman's job was a real acrobatic undertaking and fraught with much danger.

"Train crews had to make up their own trains. There were no switch engines. Failing to get a train properly made up before leaving a terminal, the necessary switching would be done at stations en route. Occasionally the binding ropes on a carload of baled hay, usually stacked on flat cars in those days, would loosen. The sight of bales of hay tumbling and bouncing down a hillside, while giving promise of much hard work later on, was very amusing."

"How many remember the time when the paymaster rolled along the Albany and Susquehanna on a hand car, distributing the monthly wages, with Colonel Coreyell carrying the bag?" he asks, together with the question, "How far would he get in these days?"

He notes, with evident enthusiasm, the amicable relations that then existed between superintendents, trainmasters, and other heads of departments and the rank and file of employes. "H. S. Morse," he continues, "was superintendent and Paul Wadsworth was trainmaster in 1872 (the year he began work). Then C. D. Hammond came over from the New York, Ontario and Western (the Midland) as division superintendent, subsequently becoming general superintendent with 'Patsy' H. Conners as trainmaster and then superintendent. Mr. Hammond introduced new methods and decided improvements in many directions which were quickly put in operation. A. J. Stone followed Mr. Hammond and he, in turn, was succeeded by the late J. H. Rosenstock. COLONEL J. T. LOREE was the next to hold that position."

"Bill," writes his correspondent, "loves to talk about the old-time conductors and engineers. They were mighty important men from his young viewpoint. Captain Merrihew, 'Dick' Bartlett, 'Kip' Gunnison, 'Billy' Gardner, 'Jake' Cromwell and 'Abe' Ottman, were the most popular passenger conductors, while George Ellis, 'Mike' Monahan, 'Papa' Deyo and George Drown were the pride of the freight conductors. Engineers Charlie Stickles, 'Ed.' Croker, 'Billy' Blake and 'Jim' Creelman took great pride in their engines and the loving care they gave their pets was said to have excited the envy of their wives."

"In the 1870-1880 period, "Bill" also recalls, "passenger conductors handled many cash fares. There was no supervision as to tickets for those boarding the trains. Great numbers got aboard without tickets and some undoubtedly hoped to escape the conductor's eye." He does not, however, attribute his blindness to his vigil in locating would-be free riders. We have his word for this which accounts for the lack of timidity indicated by such a remark. "Duplex tickets in book form," he further explains, "were unknown. Passengers did not get receipts for their fares. The control was inefficient. Spotters were frequently put on trains to check up on the returns made by conductors who at times were thought to get their personal funds mixed with those of the Company's to such an extent that the Company got the worst of the adjustment. As a result of spotters' reports an occasional conductor would be dropped from the scene of action, but such cases were rare, indeed. Conductors were generally believed to be honest—or, very clever."

Many years of experience in dealing with the public from the position of a railroad man causes "Bill" to still wonder why the average person does not consider it sinful to "beat" a railroad.

He was promoted to a conductor in April, 1880, and the last thirty-three years preceding his retirement were passed in the passenger train service. His last running was done on the Cooperstown branch.

He has been twice married. Notwithstanding his low wages, he was married in 1875 to the late Libbie Beams, of Oneonta. Their only child, Fred W. Bradt, was formerly an assistant trainmaster on the Susquehanna division, under COLONEL LOREE. He is now a yardmaster for the Erie, at Marion, O. Then in 1919, he went to California where he married Alice Culver, widow of the late Sam Culver, another old-timer in the A. & S. service. He is a member of the Order of Railway Conductors, Independent Order of Odd Fellows, and the First Methodist Episcopal church of Pasadena.

Veterans At Wilkes-Barre

Hundreds Heed Call, "On to Wilkes-Barre," Despite Pouring Rain, to Renew Bonds of Friendship and Love, Forged Many Long Years Ago

THERE were those whose days of work were over; those who are nearing the end of the trail; and those who had only recently rounded out a score of years of service making them eligible for admission to the ranks of the Veterans, together with their wives, who attended the regular quarterly meeting of The Delaware and Hudson Veterans' Association, held in the Savoy Theatre, on the Public Square, in the city of Wilkes-Barre, Sunday, April 22. Despite the unfavorable weather which continued throughout the entire trip, spirits were high on the special train furnished through the courtesy of the Management. Acquaintances were renewed; bonds of good will strengthened; while tales of adventures of these early railroaders were enthusiastically exchanged to an enthralled audience of listeners.

When the Veterans had all assembled in the theatre, filling it nearly to capacity, W. T. Campbell, president of the organization, opened the meeting by leading in the Lord's prayer, followed by the singing of one verse of "America." He then thanked the members for his appointment to succeed W. C. Gurney, deceased, as head of the association and pledged his best efforts in their interests.

Through the courtesy of Messrs. Paul R. Bedford, attorney for the Hudson Coal Company, and John B. Vaughn, the motion picture, "The Fair of the Iron Horse" was presented. The film depicts the evolution of transportation from the earliest forms of transportation down to the giant locomotives of the present day, as displayed at the Baltimore and Ohio Centennial in Baltimore, Md., during the summer of 1927.

First the horse drawn cars; the sail car, propelled by the wind; an ingenious car the motive power of which was furnished by a horse operating a treadmill. During the last half of the nineteenth century the locomotive began to assume the general lines of our present day locomotives. The huge smokestacks gave way to stacks almost hidden from view, as on our own locomotive No. 1401. Glittering brass was replaced by conservative amounts of nickel plate.

No little interest was displayed when our own John B. Jervis, locomotive No. 1401, steamed by, accompanied by the comment that it was "one of the most marked departures from the conventional lines of locomotive construction," and carried the unprecedented steam pressure of 450 pounds.

At the request of Mr. Campbell the thanks of the association were tendered Messrs. Bedford and Vaughn for the privilege of seeing the picture.

Due to pressing business Mayor Hart of the city of Wilkes-Barre was unable to address the association. He sent a representative, however, in the person of Edmond B. Morton, city comptroller, who was introduced to the audience by N. S. Burns. He welcomed any constructive criticism any member of the association might care to offer which might tend to improve the city in any way. "If, perchance, I should be away from home and someone asked me where I was from I would be proud to say I was from Wilkes-Barre. Why? Because of what it is, what it aspires to be, and for the service it renders to its population." The same applies to we who make up this corporation—the railroad—of which each member of the Veterans' Association is or was an active part. They should point with pride to the fact that they are connected with such an institution for the service it renders its patrons, if for no other reason.

"Man's greatest asset," said Mr. Morton, "is life. The longer one lives, the longer he wants to live. Its opportunities to accomplish something, its gift of time and means for service. Add to life ambition, the desire to serve and attain success and you have a formula which guarantees success. Then life will seem worth while. Without that feeling that one's work is worth while, that life is worth while, the individual is foredoomed to failure."

After this cheerful and wholesome welcome Mr. Campbell turned to the business of the association. Eleven officers, including Mrs. J. J. Conroy, Mrs. V. L. Bartow, and Mrs. P. H. Keegan, officers of the Susquehanna division group, responded to the invitation of the president to come forward and be seated on the platform. When all had taken their places George R. Davis, of Carbondale, Pa., gave a delightful recitation from the talented pen of Miss Ella Wheeler Willcox.

The proposed changes in the constitution of the organization, as drafted by the executive committee, were read by the secretary, W. J. Hill. Final acceptance was withheld due to a difference of opinion as to the number of meetings which should be held each year. One group contended that two would be sufficient; others argued that only by meeting frequently could the present interest be maintained.

Reports of the secretary, Mr. Hill, and the treasurer, D. F. Wait, together with the minutes of the last meeting were read and accepted in the usual manner. Mr. Hill also read a list of applicants for membership.

When all business had been dispensed with the organization was addressed by Mr. L. F. Perry, who praised the spirit of veteranism and the purpose which it serves. Messrs. **CONNERS**, **COBB** and **CRIPPEN** also spoke to the gathering along the same general lines. Mrs. Conroy pledged the whole-hearted support of the Ladies' Auxiliary at all times to the best interests of the Association, under their new leader.

A letter was then read by the secretary, which he had received from the Long Island Veterans' Association expressing their most profound sympathy in the loss of former president, **WILLIAM C. GURNEY**. In closing Mr. Hill called the roll of members who had passed on since the last meeting and everyone rose and with bowed heads offered a silent prayer for those of their ranks who had passed over the Great Divide.

> *"Men work together," I told him from*
> *the heart,*
> *"Whether they work together or apart."*
> —ROBERT FROST.

Are You A Capitalist

MOST of the business of the world is conducted on the basis of credit. All credit is based upon four things: capital, collateral, capacity, character. A whole chain of banks has been extended across the country which has capitalized character. All banks insist upon character as the indispensable security.

If you have a sound character, you are a capitalist.

The supreme test of character is fidelity to trusts.

Without fidelity there can be no security either in cash, collateral, or capacity.

—FORBES.

Our Bowlers at Kansas City

OF the ten members of The Delaware and Hudson Athletic Association's Bowling league who attended the Twenty-Eighth Annual Tournament and Convention of the American Bowling Congress at Kansas City, Mo., March 20 and 21, last, only one combination, a two-man team composed of **GEORGE WALDBILLIG** and **WILLIAM FOLEY**, rolled into the money. **FOLEY** made the highest single score, 258, in this event, which was also the highest rolled by any of the party, and their total pinnage was 1187. Individual, two-man and team results were as follows:

TEAM NO. 1

Beale	166	151	161	478
Clough	166	177	134	477
Evers	140	181	135	460
Waldbillig	154	151	193	498
Foley	200	213	230	643
Totals	826	873	853	2556

TEAM NO. 2

Gemberling	171	189	177	537
Sniffen	144	183	156	523
Cruikshank	171	195	193	559
Kelley	202	187	143	532
Blaising	171	156	141	468
Totals	859	910	810	2619

TWO MEN EVENT

Waldbillig	182	171	186	539
Foley	258	190	200	648
Totals	440	361	386	1187
Cruikshank	146	173	179	498
Clough	202	185	198	585
Totals	348	358	377	1083
Evers	173	153	177	503
Blaising	186	195	186	567
Totals	359	348	363	1070
Sniffen	178	183	163	524
Beale	160	175	149	484
Totals	338	358	312	1008
Gemberling	161	163	169	493
Kelley	134	145	156	435
Totals	295	308	325	928

INDIVIDUAL EVENT

Waldbillig	158	158	158	474
Foley	197	195	180	572
Cruikshank	165	163	205	533
Clough	202	191	191	584
Evers	194	199	162	555
Blaising	200	186	174	560
Sniffen	172	174	177	523
Beale	191	162	167	520
Gemberling	161	202	176	539
Kelley	194	189	190	568

Stranger: "What will you take for that fine Jersey cow you have?"

Farmer: "That depends upon who ye be. Be ye the tax assessor or has she been killed by the railroad?"—*Truth.*

Radio Service On Trains

Possibility That Movement of Freight Trains, Which Are Much Longer Than Those of a Decade Ago, Can Be Speeded By Use of Radio

RADIO has become immensely popular during the past ten years. Very few homes there are which do not boast one of these wonderful machines. A more important factor, however, than that of pleasure gained by listening in on the nightly programs of the hundreds of broadcasting stations scattered about the country, is its commercial value. Ships at sea can keep in contact with each other, as well as stations on land. In this way the shipper knows just where his ships are. When any liner or merchant ship suffers an accident dozens of other ships are notified within a few minutes and rush to the rescue. Of course it is still in an experimental state and yet even at this early date one can perceive the place it will some day hold in the commerce of the world.

Several railroads have been experimenting of late with the use of radio on their lines. Train dispatching by radio has been predicted; trains controlled entirely by radio; and communication between locomotive cab and the caboose are matters under consideration. Probably on no railroad, however, have tests proven more successful than on the Chesapeake and Ohio, according to *Railway Age*.

A freight train which is operated with the aid of radio communication between the locomotive cab and the caboose can make a faster run than one not so equipped, due to the speeding up of all movements from start to finish. Time saved means money saved. Therefore, any time saving measures are welcomed by modern railroads.

In case of a break-in-two, the exact nature of the trouble can be communicated to all members of the crew and therefore save much time in walking from the caboose to the scene of the trouble and subsequently returning to procure the necessary material to repair the break.

When a train is delayed on the line waiting for a block to clear up or for any other reason the engineman can be notified immediately upon the arrival of the flagman at the caboose after he has been called in. At the present time the engineman must wait long enough after he has called in the flag to permit the flagman to overtake the train and even then he is not sure that the flagman has not been left behind. With the advent of radio there can be no doubt on that score and the engineman will need wait only until notified to proceed.

Orders can also be communicated to the engineman in cutting a crossing and in re-coupling when ready to proceed. At inspection points all members of the crew can be notified of any trouble and its exact nature without the customary delay in walking the length of the train to the engine. In the event that a brake is sticking on the train or any other trouble develops en route the head trainman can be notified from the caboose. The engineman then slows down and the head trainman drops off, ascertaining just what is the trouble and correcting it if possible. This done he can get on the caboose and ride until the next station is reached.

Whereas formerly it took a half hour to set out a defective car, the same operation can be accomplished with the aid of radio communication in a few minutes. Then too, when a train enters a siding the engineman can be notified to stop as soon as the caboose has cleared the switch. After it has been thrown to normal position the engine is signalled ahead. The same applies in closing the switch at the other end of the siding.

In winter weather when the flying snow, and in the summer when thick low-hanging fogs obscure the vision of the crew, the conductor and engineman can be in constant communication by the use of the radio.

Radio communication in this connection is of course only in its infancy and years may elapse before it is put into general use, if it ever is. At any rate present indications are that in the event that it should prove practical it would cut down the running time of freight trains considerably. Fast freight trains nowadays are running almost on passenger train time. A few minutes delay may mean a missed connection, resultant claims, which mean money lost. Therefore, every minute saved, is money earned. On the trains where it has been installed the men are very enthusiastic over it. Every train service and engineman wants to get on those trains. Perhaps radio will prove the factor to help maintain the railroads' on time performance and also rout the freight claim bugaboo.

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That man may last, but never lives,
Who much receives, but nothing gives;
Whom none can love, whom none can thank,—
Creation's blot; creation's blank.
—THOMAS GIBBONS.

Stop, Look and Live

EVERYONE is familiar with the silent guardian of every railroad crossing in America, the sign bearing those four significant words, "Stop, Look and Listen." It stands there both day and night, a mute reminder of the dangers which ever lurk at a grade crossing. The wise heed its message—the careless speed on possibly to safety, more likely to death. No one will dispute the fact that the odds are greatly against the driver who fails to heed its warning. Figures recently computed indicate that it takes, on the average, but seven seconds for a passenger train to pass a crossing. What are seven seconds spent at a crossing waiting for a train to speed by, to months in a hospital or eternity in an early grave?

Last year the Supreme Court handed down a decision stating that when a motorist goes upon a crossing he does so at his own risk. If in doubt it is his duty to stop and if necessary get out of his automobile and look to see that it is safe before proceeding. Spring is here at last and with it comes its swarm of automobiles on the public highways. It is well for every driver to remember, both for his safety and that of every person in his car, that unseen, but ever present, he is carrying an extra passenger. He is at his side urging him to go on in the face of danger. Only when he has recorded another victim does the phantom rider Death cease his relentless urging to take a chance.

We of the railroad family, particularly those who ride in the locomotive cab, are only too familiar with the grade crossing problem. The engineman spends countless feverish moments when he sees a foolhardy driver speed on despite the ringing bell, the piercing whistle and the little sign along the way. Somewhere in the make-up of man there seems to be a "missing link." A mysterious something which bids him take a chance. Frequently a motorist will rush over a crossing, escaping death by inches, only to slow down and watch the train go by.

It is for this sort of individual that a new version of the crossing warning has been coined. Some person, realizing the truth that it does not pay to race a train, has erased the last word of those four and in its place substituted another. Perhaps in the near future we will see a painter busily engaged in modernizing the little signs at the crossing. When he is done the motorist will be confronted with the real truth. He will see in plainer words the risk he is taking.

Another kink in human nature indicates that he learns more quickly when led by a good example. Let us as representatives of the railroads of this country lead the way for all motorists by pushing safely to the fore at every crossing. If by doing so we help to cheat the Grim Reaper from a share of his victims we will indeed have done humanity a great service. In so doing let us adopt as our watchword for the automobile season of 1928 the revised slogan, "*Stop, Look and Live.*"

Luck

WHAT constitutes the thing called luck?
In it I fancy there is pluck,
And there is faith and there is skill;
It has a part of iron will;
It is born of dreams which brave men hold,
And comes to them if they are bold.
Luck is the joy which men deserve,
The rich reward of those who serve.

Luck lies to help and boost the man
Who bravely does the best he can;
It seldom benefits the base
Or raises high the commonplace.
It often helps the friend in need,
Yet he is helpless here, indeed,
Who has no courage of his own
And must depend on luck alone.

If you have faith and you will work,
If you will go where dangers lurk;
If you possess a dream and cling
To it in spite of everything;
If you are brave and wise and fair,
And have the grit to do and dare;
If you possess your share of pluck,
The chances are that you'll have luck.
—HAMMERMILL BOND.

Stephenson and His Son

Their Notable Contributions to the Development of the Locomotive and the Railroad, As Cited by Intimate Acquaintance, Form a Most Interesting Chapter

(Continued from Last Issue)

RAILWAYS had, like locomotive engines, been in use a considerable period of time prior to their being taken up by Stephenson. The colliery 'waggonways,' as they were called, dated as far back as 1602, as 'wooden railways.' The first improvement was plating the wooden rails with malleable iron. In 1738, cast iron rails were adopted, generally three feet lengths—first of all in the form of tram rails; and next round top rails of cast iron; and lastly, malleable iron rails of fifteen feet lengths.

"At the time when Stephenson was appointed engineer at Killingworth, in 1813, the description of railway then in use was exclusively cast iron rails, three feet in length, with square joints, weighing from thirty-two to forty pounds per yard, just sufficient to carry a chaldron waggon loaded with fifty-three cwts. of coal, or a gross weight of four tons.

" Stephenson first of all set to work to improve the rails, and to prevent the shock to the wheels, by the square joints. He patented, with Mr. William Losh, of Walker Iron Works, a rail with half lap joints, or with one-half of the end of the rails cut away longitudinally, for about two inches; so that when the ends of the two rails were laid together, they were the same breadth of top at each joint as the solid part of the rail, and thus the shock to the carriages was obviated. He also adopted rails three feet nine inches in length, which, of course, lessened the number of joints.

" In 1815 he laid down some rails made of malleable iron, the use of which material, on account of its being supposed to laminate, was much objected to at the time, but which he successfully controverted, in a report made by him on the subject, and which, when tested by experience, was proved not to be the case, when made of good iron; and, subsequently, he made the malleable iron rails half lapped, as well as the cast iron rails, in which shape they were afterwards used to form the Liverpool and Manchester Railway. In the patent of Messrs. Losh and Stephenson, improved forms of chairs were also proposed, for the purpose of adjusting the rails when any sinking of the stone blocks or sleepers occurred.

" Various forms of fastening the chairs to the sleepers, and also the rails to the chairs, were likewise proposed and adopted at different times. He likewise improved the construction of the wheels. In 1814, when he first commenced at Killingworth, the only wheels in use were of cast iron; both spokes, nave, and rim being cast in one piece. Experience having shown that the round top rail cut into, and formed a groove in the periphery of the wheel, a mode of case-hardening the rim of the wheel to a certain depth on the outer surface, where it run upon the rail, was adopted. This had the effect of preventing the action of the rail from operating on the surface of the wheel, and of forming a groove, so as to destroy its parallelism; but experience shortly afterwards pointed out, that when the wheel was cast in one piece, and chilled on the surface of the rim, the unequal cooling of the different parts produced unequal tension thereof, and when used at great velocities, it was apt to fly in pieces.

" Stephenson and Losh, in the patent previously named, provided against this by the use of malleable iron spokes of different forms, which yielded to the unequal contraction of the wheel, and thus prevented the breakage. But the greatest improvement of the wheel was in the employment of malleable iron tires, laid upon the cast iron cylindrical rims of the wheels, in the usual way, by heating and contraction. This was done at Killingworth upon the locomotive engine wheels. Afterwards, with the exception of the nave of the wheel, the spokes and cylindrical rim were made of malleable iron, on which was laid the wrought iron tire; and which description of the wheel now constitutes the general form of wheels in use on all railways, where the carriages run at any considerable rate of speed.

" It is impossible, in a communication of this description, to point out all the different steps which were taken by Mr. Stephenson to improve the wheels, from simple cast iron wheels to that form which now constitutes a wheel traveling with safety upwards of sixty miles an hour; and though we are not, perhaps, indebted to Stephenson for the whole of those improvements, it is certainly, to him, and to his able coadjutor, Mr. William

Losh, that we are indebted for the first application, and the practical elucidation of those principles of construction which now constitute the present improved wheels.

"Having thus, as previously stated, improved the locomotive engine up to the standard of 1829, and having also improved the rails, and wheels, Stephenson's next progress (while all these were in operation) was to lay down a system of motive power on railways, capable of being adapted to the various gradients on railways generally, and particularly on those on which he was employed, for he had not, up to 1823, laid down or constructed any new lines of railway. The colliery railways belonging to Lord Ravensworth and partners, on which Mr. Stephenson was employed, presented opportunities for exercising his engineering skill, with considerable variety. For the purpose, therefore, of thoroughly investigating the subject of the motive power to be used on different gradients, he and myself instituted a very extensive series of experiments on all the different descriptions of motive power then in use on the different colliery railways, which experiments are given in detail in my work on railways, the first edition of which was published in 1826.

"These experiments were used by Stephenson as the basis on which he founded his system of motive power to be used in railways generally; first of all, in applying such of the various descriptions of motive power thus elucidated, as were applicable to the existing lines of railway; and next, in applying them generally in laying out new lines. They may be shortly stated as follows:

"1stly—On the level, on nearly level gradients, horses or locomotive engines, were proposed to be used; laying it down as a rule, that if practicable, the gradients, ascending with the load, should not be more than 1 in 300.

"2ndly—In gradients descending with the load, when more than one in thirty, the use of self-acting planes.

"And, 3rdly—In ascending the gradients with the load, where the gradients did not admit of the use of horses or locomotive engines, then fixed engines with ropes.

"It must be explained that about this period, viz., previously to 1821, there had been no public railways projected where the traffic was equal, or nearly so, in both directions. On all the colliery railways the load was wholly in one direction, being the conveyance of coal from the pits to the shipping places; and the Stockton and Darlington, which was the first public railway introduced, was the same, being laid out for the conveyance of coal from the collieries to the town of Darlington, and to the ships at Stockton.

"Acting on these principles, Mr. Stephenson altered the different colliery railways under his management, and applied the different descriptions of motive power applicable to them, according to the principles previously enunciated. The only locomotive line for some time in use being the Killingworth line, and upon this the maximum gradient, with the load, was 1 in 330.

"The first entirely new line of railway which was laid down by Stephenson, was the Hetton Colliery Railway, which was commenced in 1819, and finished in 1822. This line was about eight miles in length, over a very undulating district of country, and Stephenson, acting on the principles heretofore explained, laid it out with about one and a half mile locomotive, then one and a half mile with fixed engine, ascending a summit of about 250 feet, then self-acting planes for about two and a half miles, and ultimately locomotive engines two miles, ending with half a mile self-acting plane; there being no less than three fixed engines, five self-acting planes, and three and a half miles locomotive.

"During the time Stephenson was employed as consulting engineer in constructing the Hetton Railway, and living at Killingworth, he had an application to survey a line from the collieries in the Auckland district to Darlington and Stockton, afterwards celebrated as the Stockton and Darlington Railway. This was the first public line projected, which was in the year 1821, and was promoted by Mr. Pease, of Darlington. Mr. Stephenson's first visit to that gentleman is deeply impressed on my memory, by having accompanied him from Killingworth to Darlington and back to Durham; and by having afforded him a practical joke against me, which to within a few weeks of his death, and on the occasion of the last time I saw him, he reminded me of. The incident is given by Smiles, not quite correctly. The fact was, we rode on horseback from Killingworth to Newcastle, a distance of five miles, traveled from thence by coach, thirty-two miles, to Stockton, then walked along the proposed line of railway, twelve miles, from Stockton to Darlington; we had then the interview with Mr. Pease, by appointment, and afterwards walked eighteen long miles to Durham, within three miles of which I broke down (and which constituted the joke against me) but was obliged to proceed, the beds being all engaged at the 'Travelers' Rest.'

"This interview with Mr. Pease, which was on

(*Turn to Page* 158)

Members of The Delaware and Hudson Company Athletic Association Ladies' Bowling League

Great Bowling Season Ends

Representatives From Our Ranks Participate in Three Bowling Leagues, And Display With Great Pride, Two League Championship Trophies

BOWLING enjoyed another successful season in the Delaware and Hudson family in the schedule brought to a close with the annual banquet Saturday evening, April 21, last. As in former seasons the play was divided between a ladies' and men's league. At their third annual banquet, held at the Phillip Schuyler in Albany, Monday evening, April 16, the ladies' league was formally brought to a close. Officers for the next season were elected, resulting in the re-election of all of this year's leaders. They are as follows: Jane Fabbo, president; Agnes Welch, vice-president; Lillian Lasher, secretary; and Mabel Francis, treasurer.

A sumptuous chicken dinner was accompanied by music by the Rythmasters Orchestra, E. M. Morrissey, director. Following the banquet an exhibition of the Black Bottom and Charleston dances was given by Florine Bouchard and Marion Popp. Dancing was also enjoyed by all those present. Cora Trick also rendered several delightful vocal solos.

Prizes for this season's bowling leaders were then presented. The Personnel team, captained by Mrs. Fabbo, won first prize of $20. The Generals, Mrs. Lasher, captain, won second prize of $15, and third place prize was won by the Tele-

THE WINNING TEAM

(Seated) Nellie Masten, Jane Fabbo, Captain, Marion Popp.
(Standing) Margaret Popp and Mildred Ferris

phone team, under the leadership of Mrs. Crowley. This award amounted to $12. Fourth place prize went to the Superintendents, captained by Miss Francis. A prize of $10 was awarded to this team. Mrs. Fabbo won high individual average honors with its accompanying prize of $10.

Next year, as this, it is expected that the league will consist of eight teams, with five members each. Its members are taken from Colonie, Saratoga Division and the General Offices. Already plans are being laid to make next season even more successful than that which has just passed.

Finis was written on the ledgers of the men's league at the annual banquet held at Hollywood Hall, in Kenwood. After a sumptuous feast had been disposed of the gathering was addressed by a group of very interesting speakers. John Evers, one-time baseball star, delivered a fine address on bowling in general, citing many interesting incidents he had witnessed and also congratulated the members of the league heartily for what they had done for bowling in the city of Albany.

Others who spoke included H. G. Becker, superintendent of Colonie locomotive shop, Scott Palmer, Robert McCormick, Everett Closson, Les Buckley, Charles Williams, and Martin McDonough of the *Times-Union*. W. W. Bates, assistant to general manager for personnel, tendered his regrets over his inability to attend through a letter, stating that he was with them in spirit although not in person. T. A. Heminway, divisional car foreman of the Saratoga and Champlain divisions, was introduced by Ray Lindsay, president of the league, as toastmaster. Needless to say he acquitted himself in this office creditably.

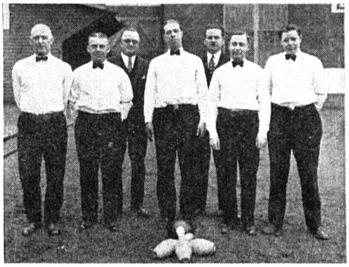
Mr. Hanlon, supervisor of wage and working agreements, was greeted by a hearty welcome when called upon for a few words. He paid tribute to the team which represented our Company in the National league of Albany as well as their rivals of the American league, the team representing Keelers.

Prizes for the leaders in bowling in the league were then presented. Colonie Motive Power team was awarded $10 for having won the league championship and an additional $30 as winners of first place in the first half of the schedule. Colonie Car department won a like prize for holding first position during the second half of the season. Prizes of $25, $20, $15 and $10 were presented to the Generals, Purchasing Agents, Car department and Statisticians respectively as runners-up in the first half. Awards of the same amounts went to the Motive Power, Generals, Paymasters and Purchasing Agents for the second half.

Individual prizes were also awarded as follows: High three games, H. Williams, $6; high single game, E. Ragotzkie, $4; high average, William Foley, $10; second high average, Floyd Clough, $9; third high average, Beale, $8; fourth, G. Waldbillig, $7; fifth, E. Evers, $6; sixth, A. J. Blaising, $5; seventh, R. Gemberling, $4; and eighth, A. Cruikshank, $3.

Two blind team prizes for each half were presented. Those of the first half were awarded to the Superintendents and Traffic teams. Those for the second half to the Traffic and Police teams. Each prize amounted to $10.

Blind prizes were also awarded to ten members who rolled more than three-quarters of the games and two prizes to members not rolling three-quarters of the games. The former were $10, each; the latter $2.



THE CHAMPIONS

(Front row) C. Williams, E. Miller, I. Kelley, J. Doyle, and W. Foley. (Back row) H. G. Becker, Shop Supt., and H. Van-Bergan, Athletic Director.

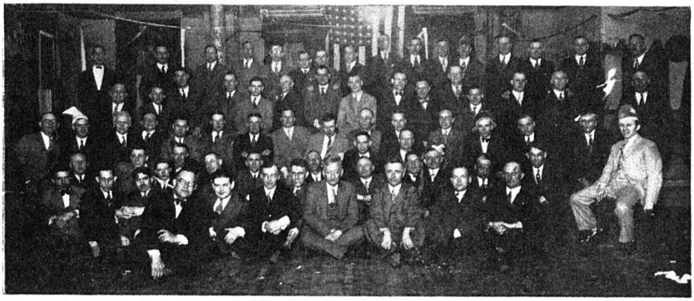
High-low tournament honors were captured by G. Long and J. Smith, $6.10 apiece. Second to A. Cruikshank and J. Doyle, $3.65 each; and third to S. Malsan and F. Cassidy, $2.45 each.

High individual single game honors went to W. Foley, with a prize of $2. He also won high individual three games, carrying with it a prize of $3.

Prizes for the head-pin contest were awarded as follows: High, W. Foley, $6.60; a tie resulted for second and third places between F. Clough and W. Sager and they were awarded $4.13 and $4.12, respectively; E. Keough placed fourth, winning $1.65. By way of showing their appreciation, the association tendered $10 to D. Connell, manager of the bowling alleys.

All of the present year's officers were again elected to lead the league next season. They are as follows: **Ray Lindsay**, president; **Earl Keough**, secretary; and **George Ayers**, treasurer.

Plans are already in the making for next season. If the coming season brings forth the success which last season has witnessed much can be expected for the Association in the way of bowling. Everyone is eager to enter the fray next fall in an effort to make this season the best ever, and also to promote a feeling of good fellowship among its players.



Members of the Gentlemen's League

Seven Veterans Retire

SEVEN veterans of the service have been placed on the inactive list at their own request and with the accord of the Board of Managers. They are as follows:

Henry Chapman, No. 205 Washington Street, Carbondale, Pa., (laborer, Car department). He was born in England, December 30, 1861, and entered the service of The Delaware and Hudson Company as a clerk, August 1, 1876. His retirement was approved as of February 1, last.

Fred Clickman, Altamont, N. Y., (crossing watchman). He was born December 23, 1863 and entered the service as a laborer and track watchman, April 1. 1896. On October 16, 1909, he was promoted to a track foreman. His retirement was approved as of December 1, last.

William H. Dougherty, No. 9 West End Ave. Oneonta, N. Y., (switch tender). He was born at Shandaken, N. Y., August 26, 1861, and entered the service as a fireman, at Oneonta, December 1, 1904. His retirement was approved as of January 1, last.

Lindsay H. Hollister, Port Henry, N. Y., (trucker). He was born at Morrisburg, Ont., November 18, 1857 and entered the service at Port Henry, as a baggagemaster, December 1, 1876. His retirement became effective on February 1, last.

Thomas C. Purcell, No. 1502 7th Avenue, Watervliet, N. Y., (clerk, Transportation department). He was born at West Troy, N. Y., July 7, 1856 and entered the service as a laborer in the Maintenance of Way department, at Cobleskill. April 1, 1872. On August 1, 1880, he became a trainman. He was promoted to a conductor, August 1, 1886, and to yardmaster, at Albany, November 1, 1903. His retirement became effective on October 1, last.

Thomas J. Skinner, No. 100 Terrace Street, Carbondale, Pa., (car repairer helper). He was born in England, September 1, 1854 and entered the service as a carpenter (car framer), at Carbondale, July 11, 1882. His retirement became effective on February 1, last.

James Whalen, No. 11 First Street, Whitehall, N. Y., (crossing watchman). He was born at Whitehall, February 8. 1847 and entered the service as a laborer, January 1. 1875. He became a trainman on September 1, 1875 and a trainman-conductor, December 1, 1878. His retirement became effective on June 1, last.

Duty by habit is to pleasure turn'd;
He is content who to obey has learn'd.
—Sir S. E. Brydges.

Stephenson and His Son

(Continued from Page 151)

the 19th of April, 1821, had the effect of Stephenson being ultimately appointed engineer to the Stockton and Darlington Railway, as described by Smiles; being so appointed in 1823, he then left his residence at Killingworth to superintend the construction of that railway.

"The Stockton and Darlington Railway was laid out on the same principles that were adopted originally by Stephenson, as previously described. The collieries were situated in the Auckland Valley, and the coals had to be conveyed over a high ridge of country called Brusselton Hill. Stephenson employed a fixed engine to drag the coals over that hill, and the line being descending from that place to Darlington and Stockton, he recommended the employment of locomotive engines.

"It was not, however, without opposition, that locomotive engines were employed. Mr. Benjamin Thompson, of Eighton Banks, had obtained a patent for, and advocated the employment of, a series of fixed engines. A controversy thereon took place between Mr. Thompson and myself on the subject, which was printed in the *Newcastle Magazine*, in April, 1822, and the following months. Mr. Thompson being the advocate of fixed engines, and myself of the locomotives. An inspection of the performance of the Killingworth engines by Mr. Pease and some of his directors, however, decided the question, and locomotive engines were employed on the Stockton and Darlington Railway. They were of the same description as the Killingworth engines, only a little more powerful, the rails being made stronger than the Killingworth rails. The rails recommended by Stephenson were malleable iron, weighing twenty-eight pounds per yard, 'fish-bellied,' according to Birkinshaw's patent; and the width of this railway, as well as the Hetton Railway, were made the same as that of the Killingworth, which ultimately became the general width of the narrow gauge lines, viz., 4 feet 8½ inches.

"The Stockton and Darlington Railway was opened on the 27th of September, 1825.

"During a portion of the time this railway was in construction, Robert Stephenson assisted his father, as well in the surveys and leveling as in the drawings of the fixed engine on the Brusselton Hill, and in the drawing and construction of the locomotive engines.

"About a year before the line was finished, or in 1824, Mr. Robert Stephenson left for Columbia; he had been applied to by a company to survey the silver and gold mines of Venezuela, New Granada, and in the expectation of such a journey being beneficial to his health (he being at that time of very delicate constitution) he accepted the offer, and did not return until the year 1827.

"During the time Mr. Stephenson was employed in the construction of the Stockton and Darlington Railway, a project, which was originally started by Mr. James, in 1803, and by Mr. Gray, in 1822 was resumed in 1824 by Mr. Saunders, viz., the construction of a railway from Liverpool to Manchester. Deputations were sent to Killingworth to inspect the locomotive engines there, and a Mr. Sylvester, a gentleman of considerable ability as a mechanic and practical engineer, remained with me a considerable time at Killingworth, engaged in making experiments with the engines and published his report to the Liverpool gentlemen in 1825. After the enquiries made by the deputations at Killingworth, and at the works in progress on the Stockton and Darlington Railway, they came to the conclusion, to recommend the construction of a railway from Liverpool to Manchester, and to solicit Mr. Stephenson to undertake the survey of such line.

"Although there were not many physical difficulties, in the formation of a line of railway from Auckland Valley to Stockton, yet, the subject being almost entirely new, brought into play much of the strong natural talent of Mr. Stephenson, in the details of its construction, and in the adaptation to the various requisites for the particular traffic thereon. The conveyance of passengers did not form a part of the original intention of the promoters, the conveyance of coals, at the cheapest possible rate, was the desideratum, and the principle which Stephenson was instructed to proceed upon. High rate of speed was no element for the consideration, either of directors or engineers; heavy loads, conveyed at moderate rates of speed, were alone considered. Hence the locomotive engines to be used on the Stockton and Darlington Railway were constructed to travel from four to six miles an hour, with the heaviest load which the power of the boiler in raising steam enabled them to accomplish; and hence we find, on Messrs. Walker and Rastrick's visit, in 1829, two years after the opening of the line, they place the performance of the engines at 47¾ tons of goods, 23½ tons weight of carriages, the engine and tender weighing 15 tons;—making altogether a gross weight of 86¼ tons, moved at five miles an hour."

Clicks from the Rails

Record Breaking Run

Another record run was made by a special train consisting of four cars over the Big Four between St. Louis and Cleveland, a distance of 536.1 miles which was covered in 509 minutes, at an average speed of 63.2 miles per hour. Fourteen minutes delay was encountered to change engines and take water. No effort was made at the time to better speed records and the crew was instructed not to exceed a speed of seventy-five miles per hour, however the average time between stations varied from fifty-five to seventy-eight miles per hour.

Only one faster trip of any considerable distance has been recorded. That was over the Lake Shore and Michigan Southern in 1905 between Buffalo to Chicago, which was made at an average speed of 69.69 miles per hour. Three locomotives were used in the trip. All were of the same class, having 75 inch drivers, twenty-two by twenty-six inch cylinders, and a tractive force of 28,600 pounds. They were built in 1909.

* * *

Four Mile Tunnel for Japan

Construction will soon be started on a new tunnel four miles in length, one mile under water and three underground, to connect the island of Kushu of the Japanese group with the main island. The cost of construction will be $10,000,000. The chief commodity to be transported through the tube will be coal mined in the island. Y. Yagiu, assistant chief engineer of the Japanese Government Railways has spent considerable time in this country and Canada during the past year studying the construction of our underground projects with a view of taking their plans into consideration in the construction of the proposed tunnel.

* * *

Mule Causes Derailment

A mule's obstinacy caused the derailment, recently, of a Southern Pacific train near Sacramento, Cal. Despite whistle warnings, it held its ground until hit. The locomotive was hurtled down a fifteen foot embankment as a result and Engineman Walter Fields, pinned underneath the wreckage, was removed to a hospital in a serious condition.

Iceless Refrigerator Car

A new era in the transportation of perishable freight has been ushered in with the advent of a unique type of iceless refrigerator car. On a test run from New London, Connecticut, to Fort Worth, Texas, a carload of fish was put in the car, at a temperature of 18 degrees Fahrenheit. After the trip, which required eleven days, the temperature of the fish was 14 degrees Fahrenheit.

Silica gel, a hard rock-like material, forms the basis for the cooling apparatus. This material has a peculiar faculty for absorbing moisture, and will absorb one-fourth of its own weight of water. Once it has absorbed the water the liquid may be released again by applying heat to the silica gel. This is done by applying small gas jets supplied from a tank of gas under the car. Evaporation causes a lowering of the temperature due to the loss of heat in the refrigerant during the process of evaporation. The water is then condensed and the operation repeated. During the test trip the outside temperature varied from 8 to 75 degrees Fahrenheit while the lading was kept at a temperature of 14 degrees with very little variation.

* * *

Longest Non-stop Run

"The Daylight," the Southern Pacific's fast scenic train between San Francisco and Los Angeles, 471 miles, is making the longest non-stop passenger run in the world, in the opinion of the company's officials. Great Britain formerly claimed this record for a train running between London and Glasgow, a distance of 400 miles. Both trains operate under similar conditions, each stopping to take water and fuel but no passengers.

* * *

Stations Named for Lindbergh

The practice of naming stations after prominent men has again come into vogue. Two adjoining stations on the Soo Line are named Rudyard and Kipling. A statoin on the St. Louis-San Francisco has already been named Lindbergh in honor of the transatlantic flyer and the Union Pacific is contemplating naming a new station on their new North Platte valley extension in Wyoming after our air ambassador.

A Transcontinental Kitten

American Railway Express employes assumed the role of keeper of a valuable Persian kitten which recently made the trip from Ashland, California, to Baltimore, Maryland, unaccompanied. Along with the box in which the treasured feline journeyed was an elaborate menu specifying just what food was to be given to cat each day. The items on the bill of fare were contained in a bag attached to the box. The first day's grill consisted of raw meat cut in small bits. Cooked meat, finely cut, was scheduled for the second day. Two boiled eggs with bread and butter composed the third day's meal and on the fourth a can of corned beef was to be fed to the kitten after all fat had been removed. On the fifth day, which incidentally must have been Friday, a can of tuna fish was to be served. Finally on the last day of the trip the kitten was forced to feed on beef once more. Needless to say, the kitten arrived safely and without loss of weight.

* * *

Man Pushes Dining Car

Don Lee, professional strong man, recently succeeded in pushing an eighty-four ton Pullman dining car a considerable distance in the yards of the Pennsylvania Railroad in New York City. The hardest part, according to Don, was to get it in motion. After that the job of keeping it rolling was comparatively easy. Doubtless he would not have been able to accomplish the feat at all however, had it not been for the fact that the car was equipped with roller bearings. Everything considered, it was a real strong man's job, nevertheless.

* * *

High Heels Ground for Suit

Women who insist upon wearing excessively high heels on their shoes do so at their own risk according to a decision handed down by Justice Morrison in the supreme court at Vancouver, B. C., at least while riding on railway trains. It seems that a certain lady was thrown heavily in the vestibule of a car when one of her "spike" heels caught between the slats of the floor. Her high-heeled shoes formed the main court exhibit at the trial. The justice dismissed the case.

Honor Our Patriot Dead

MEMORIAL DAY is consecrated to the soldiers; it is dedicated to patriotism; around this sacred day cluster precious memories of our fallen brave. Over the silent chambers of our sleeping comrades we wreathe garlands of flowers — symbols of our love and gratitude. These graves are the Nation's shrine, the Mecca to which patriots journey to renew their devotion to the cause for which these patriots died. The fruits of their victories are a united country. This is a sacred heritage purchased by their valor and sealed by their blood. Battlefields attest their courage.

"Sleep, heroes, sleep;
Your deeds shall never die."

— Anon.

THE DELAWARE AND HUDSON COMPANY BULLETIN

MAY 1, 1928

IN AU SABLE RIVER COUNTRY

Mother

IT'S a wonderful thing, a Mother; other folks can love you, but only your mother understands. She works for you, looks after you, loves you, forgives you anything you may do, understands you, and then the only bad thing she ever does to you is to die and leave you.

BARONESS VON HUTTEN

MOTHER'S DAY, SUNDAY,
MAY 13, 1928

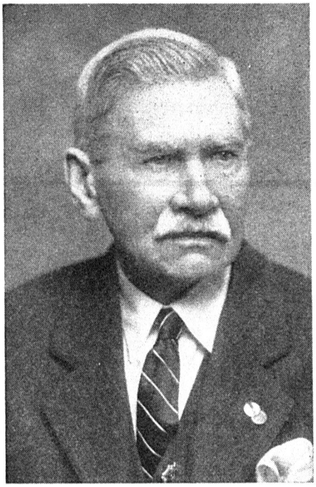
"the D&H" The DELAWARE AND HUDSON COMPANY "the D&H"
BULLETIN

Vol. 8 Albany, N. Y., May 1, 1928 No. 9

He's Always Been With Us

Eighty-Three-Year Old Engineman Has Outlived All With Whom He Began Work, Members of His Family and Regiment of Civil War Days

WITH the passing from this life of the late Chauncey M. Depew, recently, came the startling realization that the present generation has never known what it may be like to live without him. He had already won public prominence when, except for perhaps a scattering few, the oldest among us were yet children. People by the thousands knew him and admired him, although they had never seen him. Thus the goodly influence of his wonderful life can never be fully gauged.



CHARLES E. MORRISON

Neither does the present generation of railroad men on The Delaware and Hudson, particularly on the Susquehanna and Pennsylvania divisions where he was employed for so many years, know what it is like to live without the genial and kindly countenance of **Charles E. Morrison**, of No. 6 Division Street, Oneonta, N. Y., a retired locomotive engineman, in their midst. It may be that they do not see him as often as in former years, yet he mingles with them with a frequency that continues him as one of their circle, nevertheless.

It was at his own request, prompted by the unsatisfactory condition of his health, that his active career was brought to a close on October 1, 1915. At that time he had a record of thirty-five years of continuous service with the Company. These figures, however, do not represent the full extent of his railroad experience, which, with the exception of the period from 1862 to 1865, when he served with the Union forces in the Civil War, was continuous from 1858 to 1915, or approximately fifty-four years. Taking into consideration the exception just noted and another that will later be mentioned, it may also be said, and with a degree of propriety, that he has been on The Delaware and Hudson payroll for a total of no less than fifty-six years, for he is still drawing a monthly allotment in recognition of his long and faithful service.

Charlie, as he is popularly known among his acquaintances, is a most fortunate man. Possessed of an enviable personality, he has won his friends among young people and their elders, alike. In this particular respect he is wealthy, for his friends are legion. Moreover, he enjoys the unique distinction of being an octogenarian. No, you probably wouldn't believe that, because he very successfully belies his age. Be that as it may, he will, however, on July 16, next, celebrate his eightythird birthday. It is true that the broad square shoulders of his once stalwart form droop perceptibly and that his gait is somewhat slower than in former years, but balancing these few indications of advanced age is his active interest in the current affairs of his home city, his church and the railroad.

Rarely does he miss a meeting of The Delaware and Hudson Veterans' Association on which occasions he finds great delight in greeting the men with whom he formerly worked. The real proof of his age lies in the fact that he has outlived five brothers and five sisters, among whom he was the second oldest, likewise the men with whom he began his railroad work and the members of his regiment of Civil War days, insofar, at least, as he has personal knowledge. It is these things, rather than appearances, that make him an old man to those, and only those, who are bold enough to delve into his past.

His father, Martin Morrison, came to this country from Ireland when he was fifteen years old. He settled in Carbondale where, for many years prior to his death, he ran "the old Blakely engine," about midway on the No. 1 plane of our gravity road, which was used for hoisting out of Carbondale yard light cars en route to Archbald.

Carbondale therefore became CHARLIE'S birthplace. The family home was in Dartt Avenue when, on July 16, 1845, he was born. Until he was thirteen years old, he attended a public school that stood in Dundaff Street on a site now occupied by the Hendricks Manufacturing Company's plant. Through his father's associations with the gravity road, he became acquainted with C. P. Wurts, then superintendent, and it was from him that he obtained his first position which was that of carrying water for the men who were replacing the strap rail between Carbondale and Archbald with what he calls "T" iron. That was in 1858. A year later he was transferred to the Mine department and became a driver between No. 2 shaft and the Lackawanna breaker which then stood near the site of the present Coalbrook breaker. Another change brought him back to the railroad, also as a driver. He continued at this work, between what was known as Davis' and the Lackawanna breaker, a distance of about a half-mile, until 1861.

Then came the Civil War and he could not resist its lure. He gave up his job to enlist, but was rejected because he was too young. Another year of railroad work followed. But he could not ignore the call to the colors and with two pals, George Forrester and Patrick Brown, he enlisted in the 52nd Pennsylvania Infantry on March 17, 1862.

Leaving Carbondale, he was first sent to Alexandria, Va., and thence to Petersburg. Later he was stationed at Fort Royal, S. C., for about three months, following which he did boat picketing in the vicinity of Morris Island, S. C., for nearly a year. Then as a member of the 1st Brigade, 2nd Division, 23rd Corps, under General Schofield, he was with General Sherman on his famous march to the sea. He was mustered out at Salsbury, N. C., July 17, 1865.

Returning home, he was first employed at the Dickson Locomotive Works in Scranton. Then he re-entered the employ of The Delaware and Hudson Company and was given a job tending the foot of the plane at the Coalbrook breaker, at Carbondale. There he remained until March, 1866, when he left the service and became a locomotive fireman with the Delaware, Lackawanna and Western, between Scranton and Great Bend. On March 6, 1869, he was promoted to an engineman and continued at that work until 1877 when he was again employed by The Delaware and Hudson, this time as an engineman in the yard at Carbondale.

On September 6, 1880, he was transferred to the Susquehanna division and moved to Oneonta, which city has since been his home. At that time he was given a freight run between Albany and Oneonta. Ten years later, or on April 12, 1890, while running south from Green Island with No. 41, and the late Will Miller as his conductor, he suffered a serious injury in alighting from his engine at the register board at the freight house near the foot of Green Street, in Albany. He continued to Oneonta with his train, but on returning home his lower limbs became paralyzed and for six months he was unable to work. Had it not been for this injury he confidently believes that he might have continued at his work much longer than what he did.

From August, 1900, until April, 1901, while on a leave of absence, he was employed as a messenger by the American Locomotive Company. This work took him to all parts of the country, but, being a home-loving man, he did not find it to his liking and after a trip to Ogden, Utah, he resumed his work with The Delaware and Hudson, in the Mechanical department instead of on the road. For two years he was employed as night engineman on the No. 17, later known as the "Seven Spot," which was used for switching work around the shops. Then he was trans-

(*Turn to Page* 142)

What Is "Job Safety"

To the Man-on-the-Job Who Would Protect His Employe Holdings, His Accumulated Years of Service, It is Something Worthy of Consideration

WHAT is "job safety?" We hear a great deal these days about Safety First as it pertains to the preservation of life and limb, but not so much about its ability to protect one's job. Its merits, however, are about equally balanced between the two, and it is just as important that we talk about the one as about the other. But were man not so habitually neglectful of himself and his personal interests there would be no need for Safety First campaigns of any description whatsoever. Safety, briefly defined, is sensibleness — "good mental perception."

Experience, however, has taught students of human nature that the average man simply will not look out for himself as he should. He is a most dependent creature in this particular respect; someone must constantly be pointing out to him the right from the wrong, insofar as his working habits are concerned, and likewise anticipate for him, dangerous pitfalls. Deprive him of this attention, for even a brief period, and he will probably suffer injury.

Do You Know —

THAT *during 1927, the railroads distributed $3,000,000,000 in wages and spent hundreds of millions in other ways?*

THAT *the total investment in the railroads in 1926 (the last figures available) amounted to $24,290,196,788, or an average of $13,652 per employe?*

THAT *the railroads last year received an average of only 1.080 cents for moving a ton of freight one mile, and that this represented a decrease of 15.3 per cent as compared with 1921?*

THAT *total freight car loadings for the week of March 17 (the last figures available) showed a decrease of 59,846 cars below the corresponding week in 1927?*

THAT *the payment of the railroads' 1927 tax bill of 380½ million dollars was the equivalent of turning over 57,000 miles of track to the tax collector insofar as net earnings were concerned? In 1911, 25,000 miles would have sufficed.*

THAT *wage advances last year amounted to fifty million dollars?*

THAT *had the freight rates in force in 1921 been still in force in 1927, the aggregate earnings of the roads of the country would have been $950,000,000 greater than what they were?*

THAT *Class One railroads in 1927 had a net operating income of 4.40 per cent on their property investment? In 1926 it was 5.13 per cent.*

THAT *twenty-seven Class One railroads operated at a loss in February? Twelve of these were in the Eastern district, three in the Southern and twelve in the Western.*

Just as some men become injured through their own carelessness, others lose their jobs in much the same way. This being true, why, then, is it not permissible to talk of "job safety?" It is a very important subject after all. The loss of a job cripples some men nearly as much as would a serious injury. Their families suffer nearly as much, also. It is not the easiest thing, you know, to find another job these days, and this is particularly true when a man is job-hunting as the result of his own carelessness.

But what, after all, is a job? Is it not the several tasks we have contracted to perform for our employer in return for a certain sum of money called wages, massed? A job is work. Without work there can be no job. The terms are synonymous. Moreover, a job is a means to an end. It possesses dual possibilities. Well done, it insures continued employment and an opportunity for advancement with increased advantages and compensation. Carelessness, however, will destroy it.

We should indeed give serious thought to "job safety." Call it "job insurance," if you would rather. "Job insurance," as here inferred, is not the stock in trade of high powered salesmen. Neither are its terms and promises to be found set forth in multi-colored, highly embossed brochures, with imposing red seals affixed. It is, instead, a heart response. No man or woman who works for a living can afford to ignore it. It is indispensable.

Job insurance is founded on enthusiasm or the ability to subordinate self in favor of the work to be done, to the extent, at least, that no detail, however trivial, is overlooked or neglected. It is the ability to see a job as a budding flower which becomes more and more beautiful from day to day as it spreads its petals and reveals its hidden virtues, called beauty in the case of flowers. Some may find it difficult to believe this is true. They may fail to see anything of beauty in their job, which but proves that as yet their heart is not in their work, that they are not sufficiently familiar with it to be able to comprehend its virtues, its possibilities. Every job possesses possibilities, the least of which make it the stepping stone to the next job higher up. It exacts, of course, such essential requisites as ambition, punctuality, initiative, honesty, determination and a wealth of "sticktoitiveness," all of which are also born of enthusiasm.

Pride is another important fundamental of job insurance. "It is well," wrote Charles Dickens, "for a man to respect his own vocation (his job or his work) whatever it is, and to think himself bound to uphold it, and to claim for it the respect it deserves." Lack of pride indicates unfitness. There must be pride before there can be any success.

Albeit that there are many good formulas for job insurance, there is a ring of earnestness about a brief discourse on "Work," by Archer Brown, that possesses a strong appeal. He has written:

"When your work is work, *work*. Put your whole mind and heart in it. Know nothing else. Do everything the best. Distance everybody about you. This will not be hard for the other fellows are not trying much. Master details and difficulties. Know more than the boss. * * * All this is easy when the habit of conquering takes possession. Be yourself the leader, not the trailer. Set the standard as conscience dictates. Then you will mold instead of being molded."

Choose your own term—"job safety" or "job insurance"—but take good care of your job. Protect it as you would your body. It requires many years of service to get the best out of any job. Each year of service increases your assets as an employe. Don't carelessly squander your holdings.

The fact that you are a railroad man or woman matters not. Your work is important. It is about the most important work there is when it is considered that in the short space of less than a week our great centers of population would become famine stricken if denied the service you and your fellow workers are performing.

Today, as never before, however, Management is confronted by almost insurmountable obstacles. These include problems of restrictive legislation, rate reductions, increasing taxes, wage demands, motor bus and truck competition, et cetera. They are referred to as "problems of management," but it is a fact that the effect of the manner in which they are solved gravitates to the employe family. The employe is "the man on the job." It is he who handles the trains and who mans the shops and offices. It is he who can effect economies and increase production. The success of his job depends upon the success of the railroad whereupon he is employed. If he considers job insurance of value, he will do his utmost to assist Management in bearing its rapidly increasing burdens. Failure to do this will be to put his job up for bid or chance the risk of having it abolished altogether.

The Public Pays

HOW we pay taxes without knowing it is illustrated by figures collected by the Ohio Committee on Public Utility Information.

Last year public utility companies providing Ohioans with electric light and power, gas, telephone, and electric railway services, paid $24,057,471.52 in taxes. This was an increase of $6,000,000, or approximately 31 per cent over 1921. All of this was paid, of course, by the public which used these services.

The committee finds that the average user of light and power, gas and telephone service, paid $18 last year in taxes, through the medium of the monthly bill for service. In addition, out of each dime he paid for street car rides, one cent went for taxes.

In detail, the several kinds of utilities paid taxes in 1926 as follows:

Seventeen cents out of every dollar paid by consumers for gas went to pay taxes.

Eleven cents out of every dollar paid for electric light and power went for taxes.

Eleven cents out of every dollar paid for telephone service went for taxes.

Eleven cents out of every dollar paid for electric railway fares went for taxes.

This means that if a consumer pays $3 a month for gas, he pays $6.12 in taxes during the year. If his electric light bill averagd $3 a month he paid $3.96 in taxes during the year. If his telephone bill averaged $3 a month, he paid another $3.96. If he took a street car twice a day, he paid between $6 and $7 more in taxes—From the *Youngstown (Ohio) Vindicator*.

Vagabondage In England

Rogues and Vagabonds of the Sixteenth Century Confronted England's Thinkers With a Problem of Its Kind Never Presented In Any Age Before or Since

IN the sixteenth century rogues and vagabonds were larger in proportion to the population of England than they ever were before or ever have been since, and the history of the times shows why this should be true. Elizabethan rogues and beggars were a by-product of the change from the mediaeval to the modern system of holding land and paying agricultural labor, which took place in the fourteenth and fifteenth centuries.

Gabriel de Mussis, an Italian lawyer, accompanied the march of the bubonic plague, then known as the "Black Death," from the Crimea (whither it was said to have been introduced from Tartary) to Genoa, where, with a handful of survivors of a Genoese expedition, he landed probably at the close of the year 1347. He narrates how the few that had themselves escaped the pest transmitted the contagion to all they met. Nearly the whole of Europe was gradually overrun by the pestilence. It reached Oxford in 1352 when two-thirds of her University population was lost. The second plague followed in 1361 and the third in 1368. The mortality of the "Black Death" was enormous. It is estimated that, in various parts of Europe, two-thirds or three-fourths of the population died in the first pestilence, and that in England the mortality was even higher.

In the fifteenth and sixteenth centuries the "Black Death" recurred frequently in nearly all parts of Europe. The epidemic of 1563 in London was very severe, a thousand dying weekly. There was a great plague in England in 1592 and again in 1599. In 1603 more than 38,000 died in London; in 1625 more than 35,000. The fifth epidemic, in 1647, was not so severe, but in 1664-1665 occurred what has since always been spoken of as the "Great Plague," when out of a population of 460,000 the bills of mortality recorded the death of 68,596, which number is considered rather too low.

Those afflicted were confined to their houses, which were marked with a red cross and the legend "God have mercy upon us," but almost invariably death came within five days. It affected all classes of society. Joan, the daughter of King Edward, and two Archbishops of Canterbury were among the victims, while the long continuance of the visitations, which as a rule took from six to nine months to work out their virulence in any particular spot, seems to have cowed and demoralized society.

England was still an agricultural community, worked on the manorial system, and the sudden disappearance of a third of the farm hands threw everything into disorder. Hence there arose, almost at once, a bitter and long-continued strife. An open market for labor meant prosperity for every man who was free to sell his labor wherever he liked, and all over England the peasant made a determined and usually successful effort to get the market value of his labor. On the other hand, the employers sought for relief. It was found that there was an excellent market for wool in Flanders, and, during the latter half of the fifteenth century the industry of cloth weaving grew up in the towns of England, so that by the year 1500 sheep raising had come to be far more profitable than tillage. Now the landholders began to assert their right to the market price of the land. The ancient landholder lived without the aids and appliances of modern luxury. His grandeur consisted, not in the length of his rent-roll, the brilliance of his equipages, or the beauty of his palaces or parks, but in the strength of his fortresses, and the numbers of armed and disciplined retainers and feudal tenants who followed his standard. His splendor consisted in his power. All this the "Black Death" destroyed; it did more: from the middle of the sixteenth century land began to fall into the position of other marketable property. Whatever else may be said, the ancient system of land-holding and land-working had been changed never to be resumed.

Other causes, minor ones, added to the confusion. The great bands of feudal retainers, which the landowners had maintained, were broken up and dispersed. The dissolution of the monasteries by Henry VIII had an important effect. In their prime they gave a great deal in charity, but without much discrimination between worthy and unworthy. Whoever came to the door received an alms. No adequate provision

(*Turn to Page* 140)

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Faith builds a bridge across the gulf of death,
To break the shock which nature cannot shun,
And lands thoughts smoothly on the other shore.
—YOUNG.

Walking for Health

THE best medicine! Two miles of oxygen three times a day. This is not only the best, but cheap and pleasant to take. It suits all ages and constitutions. It is patented by infinite wisdom, sealed with a signet divine. It cures cold feet, hot heads, pale faces, feeble lungs, and bad tempers. If two or three take it together it has a still more striking effect. It has often been known to reconcile enemies, settle matrimonial quarrels, and bring reluctant parties to a state of double blessedness. This medicine never fails." Thus prescribed an old bootmaker mentioned by Hinsdale in his essay, "Atmospheric Air in Relation to Tuberculosis."

"Walking for Health," which is but the modern interpretation of the old bootmaker's logic, was discussed through Radio Station WGY, not long ago, by Dr. F. G. Metzger, health officer for the village of Carthage, N. Y. "More ills," said Dr. Metzger, "are caused by disordered activity in organs as a result of errors in diet, rest or exercise, than are caused by actual disease processes. The various physiological processes of the body depend for their proper performance upon activity. The blood will not be adequately aerated in the lungs unless the chest is well expanded; indigestion will result if there is sluggishness in the stomach and intestines due to faulty action of the muscular system of these internal organs; the heart structure will fail in its efficiency if excess fat accumulates in and around its muscular walls or increases its work by disproportionate deposit through the body generally; and the nervous system is prone to develop certain functional disorders such as irritability, insomnia, et cetera, resulting from prolonged irritation by the poisons of faulty changes in the body chemistry. Walking exercises practically every muscle in the body, keeps you physically fit, and gives added zest and enjoyment to the day's work.

"Golf is indulged in by many who derive great benefit from the walking incidental thereto. Other popular out-of-door sports, such as tennis, baseball and football are excellent for those physically fit to indulge, though it requires no great stretch of the imagination to see that they are for the most part different from the exercise of brisk walking only in intensity. Those who have witnessed the slow motion pictures of a walking match were probably quite surprised to note that the entire body entered into the effort. However, the stride and rhythm is more important than anything else, because unless there is free swinging of the arms, accompanied by a slight turning of the body with each step, the very valuable exercise of the body from the hips up is lost."

Try "Walking for Health." You'll enjoy it, surely!

Mother

THE theme is worn and aged, lads,
But so is mother's brow,
And though you know what I shall say
I'll say it anyhow.

The theme is worn and aged, lads,
But so are mother's hands.
No matter what her boy may do
She always understands.

I often wish that I might be
A little boy again
And run to her in grief and joy
In gladness and in pain.

I often wish that I might see
Her by the cottage door,
Or sitting in the window seat
That roses clambered o'er.

I often wish that I might smell
The hollyhocks she set
Along the garden paths beside
The fragrant mignonette.

The theme is gray and hoary, lads,
But so is mother's hair,
And could I find the way back home
I'd find her waiting there.

—NEW YORK SUN.

Stephenson and His Son

Their Notable Contributions to the Development of the Locomotive and the Railroad, As Cited by Intimate Acquaintance, Form a Most Interesting Chapter

(Continued from Last Issue)

STEPHENSON'S first attempt to revolutionize railways commenced with the improvement of the locomotive engine, and it is necessary, as well as interesting, to glance at the state of railways, and the locomotive, when he entered upon the scene; and the opportunities which he had previously experienced to venture upon so formidable and important an undertaking.

"We have seen that he had acted as fireman to his father at Wylam, and, subsequently, at seventeen, as brakesman, at Callerton colliery, a short time after as engineman at Walbottle, that he then removed to Willington Quay, and afterwards to Killingworth. At Walbottle he would see a railway for the conveyance of the coals from those pits to the river Tyne, near Lemington, but this was a wooden railway. He would, likewise, see the wooden railway from the Wylam colliery to the river Tyne, which passed through Newburn, the cast iron tram rails only being down as a substitute for wooden rails in 1808. At Willington Quay, he had only, I believe, a wooden railway for the conveyance of ballast, but when he went to Killingworth he would then see a cast iron railway, on which the coal waggons were dragged by horses. These rails were the common cast iron round top rails, in three feet lengths, and only of sufficient strength to carry a chaldron waggon loaded with fifty-three cwts. of coal.

"His experience of railways had then only been of short duration, and the maximum performance of railway communication, at that time, was about three waggons of four tons each, or twelve ton gross, conveyed twenty miles a day with horses, at the rate of two and a half miles an hour. Attempts had been made to employ locomotive engines on railroads. Watt, Evans, Symington, Murdoch, had all considered, and made suggestions for the employment of steam engines to propel carriages, both upon railways and common roads.

"Trevethick, in 1802, patented an engine, and in 1804 it was tried on a railway in Wales, but abandoned. Mr. Blenkinsop, in 1811, took out a patent for a locomotive engine, working by a rack, or toothed rail, which was employed at the Middleton colliery, near Leeds, in 1812, and an engine of this description was also used on the Coxlodge colliery railway in 1813. Chapman also had an engine which worked by an endless chain, and which was placed on the Heaton colliery railway in 1813. Brunton had also an engine, which was tried on the Newbottle railway in 1813. Mr. Hedley, of Wylam, also constructed a locomotive engine, which commenced working on the Wylam railway in the early part of 1813. This railway was a cast iron tram road, and Mr. Hedley being doubtful if the adhesion of the wheels upon the railway was sufficient for the engine to propel itself, and also a load forward, had some experiments made for that purpose on the Wylam railway, with a carriage made expressly with that object, the result, as stated by Mr. Hedley's son, in a pamphlet, entitled 'Who Invented the Locomotive?' was, 'that the friction of the wheels of the experimental carriage alone upon the rails, when it approached to the weight of an engine carriage was sufficient to enable it to overcome the resistance of an attached train of carriages.'

"Such was, then, the state of railways, and the progress made towards the use of locomotive engines on the different railways, up to the time when Stephenson first turned his attention to the subject. Blenkinsop's with rack wheels; Chapman's with a chain; Brunton's with legs to propel them; and Hedley's, at Wylam, which propelled itself by the adhesion of the wheels upon the rails.

"Soon after Stephenson had become established as engineer to the partnership collieries, in 1813, his attention was drawn to the cost of conveying the Killingworth coals by horses, where one horse only took three chaldron waggons, or about eight tons of coals, at a time. He had inspected the locomotives at Heaton and Coxlodge, which had been abandoned, and that at Wylam, which was at work. The latter engine was working on a plate rail, and with this information of what had been done, he set to work to construct an engine. The first question was as to the adhesion of the wheels upon the round top rails, and several experiments were made by Stephenson and myself, on the adhesion of such rails. Having been satisfied on this point, Stephenson discarded any extraneous assistance to propel the engine forward, such as employed by Chapman, Brunton, or Blenkinsop, simply coupling all the engine wheels together, so as to have the adhesion of the whole weight of the engine.

"The first locomotive engine which propelled itself by the adhesion of its wheels on the round top rails was erected at Killingworth, and tried on that railway on the 27th of July, 1814. The steepest gradient on that line, with the load, was 1 in 450, which it ascended with eight loaded waggons, weighing altogether about thirty tons, at the rate of four miles an hour. At this time Robert Stephenson was about eleven years of age, and had just entered at Bruce's school, Newcastle.

"I have alluded to the successive improvements made by Stephenson in the locomotive engine. Cog wheels were, first of all, superseded by an endless chain, to secure adhesion of the four wheels. Next by a system of cranks with side rods. And up to the time of the Liverpool and Manchester experiments in 1829, this was the only description of engine used. The improvements in the construction of the locomotive engine by Stephenson, over those at that period in use, viz., that on the Wylam tram-road, and by Mr. Blenkinsop's, at Leeds, was in the application of two cylinders, instead of one in the former engine, and in the mode or modes of communicating the action of the pistons to the driving wheels of the engine, and the application of the power adhesion on the round top rails to propel the engine and load, without the intervention of racked rails or other contrivances to propel the engine forward.

"The first engine on the Killingworth railway had four three-feet driving wheels. Four-feet wheels were afterward used, by which an increased effect was produced by the diminished friction of the working parts of the engine, and by the increased speed which was attained. It had only one tube through the boiler, twenty inches in diameter and eight feet in length, by which the steam was generated. It was soon found that the great drawback to the power of the engine was the comparatively deficient quantity of steam generated in a given time.

"The weight of the rails of the Killingworth railway, which were cast iron, was from thirty-two pounds to forty pounds per yard; their strength, or rather weakness, therefore, precluded the adoption of heavy engines, or large boilers, and hence the limit, at that period, to the power of the locomotive engine. The blast in the chimney, which afterwards formed so important an element in the evaporation of steam, was then comparatively inoperative, from the imperfect mode in which it was applied, and from the slow rate of speed at which the engine moved.

"As the subsequent importance of the blast in the chimney has given rise to more than one claimant for the discovery of this contrivance, it is necessary that I should make a few observations on the part which Mr. Stephenson took in the matter. Mr. Hedley states in his work, 'It was at Wylam, in the small chimney, that the value of the blast was ascertained, and not elsewhere.' Mr. Timothy Hackworth likewise aspired to the efficient application of it, if not to the original application. Whether or not the importance, or efficient application, was first of all adopted at Killingworth, I know that the steam from the cylinder was passed into the chimney by a pipe in the first engine tried on the Killingworth line; and as the mouth of the pipe was turned upwards, it must of necessity have acted as a blast, as, from the noise made by the exit of the steam into the chimney through the pipe, the engines got the name of 'puffing billies.'

"Mr. Hedley passed the steam from the cylinder into a receiver, from which it passed into the chimney by a pipe for the purpose of preventing the noise of the injection of the steam into the chimney, and which, he says, prevented the noise of the steam. This was inconsistent with the action of a blast; but, he adds, 'many persons say that from the first it was apparent the chimney-draught was increased,' and 'I have also been told that the pipe got furred or partially choked; and when the obstruction was removed, it was found that steam could not be generated so rapidly, and that, to increase the supply, the drivers, by means of an iron ring, contracted the orifice of the pipe, and kept it secret for some time.'

"As Mr. Hackworth's application of the blast, was to the Stockton and Darlington engines, which were not used until some years subsequent to the time the Killingworth engine was tried, he could have no pretence to the original application of the blast; and as Mr. Hedley does inform us when the circumstances alluded to took place, we cannot determine whether it was previous to, or later than July, 1814, when it was first used by Mr. Stephenson.

"The description of this engine and the application of a double-tube engine on the heavier rails of the Stockton and Darlington railway, were the only descriptions of engines working by the adhesion of their wheels on the round top rails, until the year 1829, when the experiments at Liverpool took place, which led to the most important improvements of those engines.

"The maximum performance with six-wheel engines, on the Stockton and Darlington railway, as reported by Messrs. Walker and Rastrick, who were employed by the Liverpool and Manchester railway to inquire into the most efficient description of motive power then used on railways, with a view of advising what description of motive power should be used on that railway, was eighty-six and a half tons, including engine and tender, weighing eighteen tons, moved at the rate of five miles an hour; and with four-wheel engines, on the Killingworth railway, sixty-seven and a half tons, including engine and tender, of ten and a half tons weight, moved at the same rate of speed.

"Such then was the power of the locomotive engines in use in the early part of the year 1829, when the directors of the Liverpool and Manchester railway offered a premium of £500 for the most improved locomotive engine; and as the merit of the greatest portion of the improvements which carried away that premium was due to Mr. Robert Stephenson, it may be proper to trace his history up to that time.

" * * * He was first of all * * * put to the village school at Long Benton, to a Mr. Reuter * * * with whom he continued until the year 1814. He was then sent to Mr. Bruce's academy at Newcastle-upon-Tyne, and was well known on the road between his father's residence and Newcastle, a distance of upwards of four miles, by riding back and forth every day upon an excellent ass (noticed in Smiles' work). He remained at Bruce's school for about four years, or until 1818, when he was entered as an apprentice to me as a mining engineer, at Killingworth, living, of course, with his father all the time. He remained with me about three years, when his father sent him to Edinburgh to attend the college lectures, which he did for about six months. He then returned to Killingworth, where he remained until 1824, when he left for Columbia, having been engaged to inspect some mines in that country for a mining company, from whence he returned in 1827. He was thus at home at Killingworth, after leaving school, from 1818 to 1821, engaged in his apprenticeship as a mining engineer, or from the age of fifteen to eighteen years; and again from 1822 to 1824, or from nineteen to twenty-one years; and he returned permanently in 1827, when he was twenty-four years of age.

"As regards the improvement of the locomotive engine, therefore, it does not appear that he entered upon the exercise of those talents which became so conspicuous thereafter, until about the years 1823 and 1824, on his return from college. The engine manufactory had then been established in Forth Street, Newcastle-upon-Tyne, in which his father was a partner, and where he was employed, amongst other things, in making the drawings of the locomotive engines for the Stockton and Darlington railway. On his return from South America, we find him assisting his father in the construction of railways, as will be explained hereafter, and, no doubt, considering the subject of the locomotives to be employed on the Liverpool and Manchester railway, which was then in the course of construction by his father.

"After this brief history, I shall leave the case of the locomotive engines in the state in which they were in 1829, and shall now follow up the history of the improvement of railways from 1813, the date when his father was first employed as an engineer at Killingworth colliery, up to the same period, more especially as from that time, viz., 1829, we may date the joint effort of the father and son being applied to promote the improvements of both locomotive engines and railways."

(To be continued in Next Issue)

Fifty Years Ago

THE progress of experiments with the electric light seems to afford additional proof of the importance of the discovery and of its value for practical use. In Paris it has been subjected to careful trial at the Paris, Lyons & Mediterranean Railway station, where the whole of the building was illuminated like day. The light seems especially adapted to large railway buildings, such as the shop of the Lake Shore & Michigan Southern at Cleveland, which was recently lighted with two electric lamps, each equal to 2,000 candle lights.—*Railway Age*, February 21, 1878.

The Pullman Company has received a request from a man who was forced to take an upper in the car "Aloha," that the car be rechristened "Anuppah."—*Railway Age*.

Vagabondage In England

(Continued from Page 135)

was made for the homeless monks. As a class they were not very intelligent, and many of them were soon reduced to begging. Thus they swelled still further, after the dissolution of the monasteries, the ranks which they had helped to maintain before.

Immediately after the defeat of the Spanish Armada in 1588, the number of vagabonds was greatly increased by poor soldiers and sailors on their way home from the wars. Provost marshals were appointed with the special duty of apprehending and punishing them, and occasionally special tribunals were held to inquire into their complaints. The Council finally ordered that they should be given, along with their discharge at the port towns, an allowance of money for their expenses homeward and a license permitting them to travel unmolested so long as they followed a specified route and arrived within a definite limited time.

The problem of getting a living without work was simplified to the vagabond by the fact that there was everywhere a large amount of indiscriminate charity—at the monasteries before their dissolution, at weddings and other feasts, and at the houses of foolish, soft-hearted persons. This life was further made easy by the fact that the authorities granted a wide variety of what were considered deserving poor, licenses allowing them to wander and to ask alms on the streets and highways. The number of these licenses regularly issued was enormous. They were counterfeited by undeserving rogues on every hand. They were given character largely by the number and variety of legitimate licenses in use—licenses to beg for ransoms of Christians captured by the Turks; on account of losses by fire and at sea; to scholars at the universities; for indulgences and pardons; for the support of hospitals; for the relief of insane, sick and lame; to renew church furniture; to repair a bridge; for causes without end. These permits took on an air of respectability, and were looked on with something of the same attitude we now have to an insurance policy—a means of compensating one individual for extraordinary calamity by a small sacrifice from many.

The gypsies came to England as early as the beginning of the sixteenth century. Wandering vagabonds patterned their life in many ways upon the practices of the gypsies, disguising themselves as gypsies, wandering in company with them and adding to the general confusion.

Before 1530 there was almost no legislation upon beggars and vagabonds, but from that year until the end of the century the rogues and beggars received constant attention from Parliament. The legislation fell into three periods and from it three conclusions seem to be drawn: (1) that severe and cruel punishments did not suppress vagabondage but only made it more exciting; (2) that the one effective punishment for sturdy vagabonds and beggars was to set them to work; and (3) that for the relief of impotent poor it was far better to levy a regular tax than to depend on charity. These brief general statements sum up what was in reality a great legislative triumph. The hangings, the whippings, the confinement in the stocks were abandoned. The houses of correction and provision of wool and hemp did what the whips and stocks and even the gallows did not do. Being set to work was worse than death. The measures of restraint became regular instead of being violent and spasmodic. Whippings and worse punishment they had been able to evade or endure, but work was another matter. While, as to the impotent poor, the English lawmakers, in a period of seventy years, developed from the rudest of beginnings a code of laws which were the foundation of English poor relief for the next two hundred years.

The interesting and dangerous element had been not the impotent poor but the sturdy beggars. These were the fellows who had been strong and keen-witted enough to make vagabond life exciting and pleasant. Far from being either an impotent or a harmless class, these rogues represented much of the solid strength of mediaeval England. Many of them came from good stock, but in the new economic scheme they found no useful place. They had brains to plan villany and audacity to execute it. Their ranks contained political, religious, and social malcontents and agitators. There was a close-knit fellowship among them; they helped each other in their common pursuit of preying upon the public. They often traveled in companies or assembled at some alehouse for merry meetings. They spoke together in a cant language. There were orders or ranks depending partly on experience, partly on methods of stealing or begging, and partly, it seems, on physical strength. There were twenty-four of these orders ranging from "Rufflers,"

Benefits Paid Recently Total $65,951

IN recent months, or rather since the publication of a similar list in *The Bulletin* of February 15, last, death benefits of $65,951 have been paid to the beneficiaries of thirty-seven deceased employes under our plan of Group Insurance. Relatives of five pensioned employes received $9,800 of this sum by virtue of a resolution passed by the Board of Managers on June 21, 1922 providing for the continuance by the Company of existing insurance on the lives of employes pensioned subsequent to April 1, 1922. It will also be noted that $5,000 was paid in excess of the face value of three policies as the result of their holders having suffered accidental deaths. Prior to death one subscriber received total and permanent disability benefits, the balance subsequently becoming due on the policy having been paid to the beneficiary. Individual remittances follow:

NAME	RESIDENCE	OCCUPATION	DATE DIED	CLAIM
Burke, Harry J.	Colonie	Machinist	Feb. 7	$1,800
Carkhuff, Harry P.	Wilkes-Barre	Water Tender	Dec. 23	500
Carpenter, George (P)	Carbondale	Storeman	Feb. 10	1,400
Combes, Anson A.	Binghamton	Engineman	Feb. 17	2,800
Coomes, Charles (P)	Cohoes	Flagman	Jan. 25	1,000
Conroy, Thomas	Troy	Laborer (M. P.)	Dec. 7	500
Copeland, William	Carbondale	Yardmaster	Mar. 15	3,000
Cox, Fred W.	Colonie	A. B. I & Repr.	Feb. 5	2,000
Davagio, Pasquale	Oneonta	Trackman	Jan. 1	1,000
Davis, Joseph L.	Olyphant, Pa.	Gate Watchman	Dec. 18	1,000
Dominique, Paul	Troy	Moulder	Dec. 25	1,000
Dougherty, John J.	Wilkes-Barre	Conductor	Dec. 30	*4,400
Eisenman, Jacob	Colonie	Patternmaker	Mar. 20	1,600
Fisher, Bert F. (P)	Cooperstown	Engineman	Jan. 28	3,200
Forney, Francis J.	Rensselaer	Electrician (Sig.)	Jan. 5	2,400
Gagliarde, Charles	Binghamton	A. B. I. & Repr.	Jan. 6	1,600
German, John Sr.	Wilkes-Barre	A. B. I. & Repr.	Feb. 25	1,800
Graziano, James	Whitehall	Trackman	Feb. 11	*2,000
Gurney, William C.	Binghamton	Conductor	Jan. 13	2,200
Harkins, John	Dickson, Pa.	Crossing Watchman	Feb. 28	1,000
Jones, Arthur (P)	Schenectady	Fireman	Dec. 23	1,000
Kelley, J. LeRoy	Whitehall	Engineman	Mar. 1	**2,351
Lappeus, William H.	Colonie	Car Repairer Helper	Jan. 23	1,200
Mahar, James P.	Oneonta	Car Inspector	Dec. 24	1,800
Markoli, Nick	Unadilla	Flagman	Sept. 23	***2,400
Monahan, Patrick J.	Green Ridge, Pa.	Asst. Yardmaster	Feb. 5	2,400
Parker, William H.	Mechanicville	Asst. Signalman	Feb. 11	1,200
Patkul, Tony	Providence, R. I.	Trackman	June 9	1,000
Purcell, Richard D.	Albany	Trainman	Mar. 6	1,600
Samler, Harry F.	Oneonta	Foreman (Car)	Feb. 7	2,600
Scully, Daniel	Cohoes	Storeman	Jan. 16	1,000
Shipton, Larry	Scranton	Trackman	Mar. 5	500
Smith, Dennis J.	Delanson	Trainman	Dec. 8	500
Smith, Phillip T.	Whitehall	Ditcher Fireman	Feb. 28	*3,600
Tario, Peter	Green Island	Trainman	Dec. 27	2,200
Winters, Willard S. (P)	Plattsburg	Engineman	Mar. 9	3,200
Wyklient, John	Wilkes-Barre	Box Packer	Dec. 27	1,200
			Total	$65,951

(P) Pensioned employe.

* Sum represents double indemnity.

** Balance remaining on policy for $2,400 after insured had received Total and Permament Disability benefits of $49.50. Exact balance $2351.50.

*** Death occurred in 1926 and the subsequent delay in the payment of benefits was due to the inability to locate the deceased's relatives.

sturdy vagabonds who begged from the strong and robbed the weak, to "Kynchin Coes," male children used for begging, lookouts and such-like work. The palmiest days for these rogues were from 1547 to 1575.

The rogues were so hard to distinguish from the harmless vagabonds that all were legislated against in common under the one comprehensive term "vagabond." But while the legislation against begging had been a great triumph, on the other hand that against the rogues was an absolute failure. The problem was more complicated, of course. The rogues were far more clever than the wandering beggars, and it was obviously difficult to legislate against a tribe whose pride it was to have a new trick for every occasion. The rogues were far less numerous than the beggars, and their doings were more carefully hidden from the public. Without a detective force and a rogues gallery it was hard to catch them.

But the most important reason for the rogues immunity from legal interference was plain "graft." They had influence in high places. Gaming houses and bowling alleys, taverns, alehouses, et cetera, were licensed, loaded dice were approved and sealed, marked cards were sold and the profits shared with the favorites of the Crown. Hence it was that the rogues, shielded by royal protection on the one hand, and by the vagueness of the laws and stupidity or dishonesty of the officers on the other, went on practically unchecked.

No age in the history of England has offered its thinkers such difficult problems with such scant help toward their solution. We to this day enjoy the fruits of their success in dealing with the problem of the impotent poor. We to this day have in no way overcome their failure in dealing with the rogue. They failed through ignorance, not seeing the paralyzing effect of graft, the association of the rogues with the officers of the state, careless, selfish and corrupt in the discharge of their duties, sharers of the spoils. They made an honest effort and failed in ignorance. We do nothing and sin against the light.

An eminent English authority, Doctor Kerr, writing on education, says "the business of a school is not primarily to impart book-knowledge but to develop healthy personalities. The extra-curricula activities take on an increasing importance because the College now has to supply much of the culture which in happier times was picked up at home in ordinary social intercourse."

He's Always Been With Us

(*Continued from Page* 132)

ferred to a day shift as a machinist in which capacity he was employed when he retired.

On January 1, 1870, he was married to Margaret Nalley, of Carbondale, and to them two sons and four daughters were born. One son, Charles, suffered an accidental death at the "dry bridge," between Howe's Cave and Cobleskill, in 1890. Another son, WALTER, learned the machinist's trade at the Oneonta shops where he is still employed, but as a foreman. Three daughters married railroad men. Mrs. J. P. Cannon, of Albany, was formerly the wife of the late Thomas E. Riley, an engineman, and the others are the wives of T. P. DUGAN, general boiler foreman and locomotive inspector, and H. E. SEXTON, assistant yardmaster at Oneonta. Mrs. Morrison died on November 7, last.

He is commander of the E. D. Farmer Post No. 119, G. A. R., of Oneonta, which, at this late date, boasts of a membership of seventeen. He is also a member of St. Mary's Roman Catholic church and the Knights of Columbus, of Oneonta; the Brotherhood of Locomotive Engineers, Division No. 58, of Oneonta, of which he is a charter member; and The Delaware and Hudson Veterans' Association.

Index for The Bulletin

An index for Volume 7 (1927) of *The Bulletin* is now available. Requests should be made to *The Bulletin*, Room 408, The Delaware and Hudson Building, Albany, N. Y.

Rastus: "I tells you, Sambo, I done found out de difference between men and de women at las'."

Sambo: "What—what is it?"

Rastus: "Wall, a man'll gib two dollars for a one dollar thing dat he wants, an' a woman'll gib one dollar fer a two dollar thing she don't want!" —*Clipped.*

INSURANCE CLAIMS PAID

MARCH, 1928

Death benefits	$21,151
Health benefits	11,433
Accident benefits	583
Accidental Death and Dismemberment benefits	3,300
Total and Permanent Disability benefits	519
Total benefits	$36,986

Clicks from the Rails

Road of Many Curves

In twelve miles of track on the Umtah Railroad, which connects Mack, Cal., and Watson, Utah, seventy miles distant, there are 233 curves some attaining a curvature of six degrees. Extremely steep grades are also encountered in the Bookcliff mountains, where the road climbs from an elevation of 4,541 to 8,437 feet above sea level, in a distance of thirty-five miles. Geared locomotives are used on account of these grades, but are to be replaced by specially constructed rod locomotives. On account of the road's natural handicaps it has been named by the Interstate Commerce Commission as the most difficult railroad in the United States to operate.

Gilsonite, a mineral, the world's only large supply of which comes from the eastern region of Utah, is the principal product carried. During the past year 35,000 tons were transported.

* * *

King's Train a Marvel

King George of England's private train, a marvel of coach work and interior decorating, affords all the luxuries of his most exquisite summer palace. He enters the train through polished double doors of teak, which open into a large vestibule. His smoking room, adjoining the vestibule is finished in choicest mahogany, with a morocco leather covered arm chair in each corner. The day compartment is furnished in silk-trimmed furniture and imitation Jacobean tapestry, chosen by the queen. Leading from the day compartment is the king's bedroom, containing a silver-plated bed and satinwood dressing table. Further along is the bathroom.

* * *

Owl Stops Express Train

Passengers on the Vologda-Leningrad express were badly shaken up recently when the train, while running at a speed of fifty miles per hour, stopped abruptly. Investigation developed that an owl had alighted on the locomotive and had clutched an air valve in an effort to hold on, thereby applying the brakes in emergency. The bird was captured and the train proceeded.

B. & O. Has Clock of Mystery

In the office of the general superintendent of the Baltimore & Ohio at Pittsburg, according to the *Railway Age,* is a clock of mystery. It is a huge affair and the cabinet is encased in solid walnut. Watchmakers who have examined it state that it dates back to the Revolutionary War period and is at least 150 years old. Despite its advanced age, however, it keeps remarkably good time. It has been in the office since 1901, when the Baltimore & Ohio took over the Pittsburg & Western, but its history prior to that time is unknown.

* * *

Oxen Used for Motive Power

Oxen are the motive power used for switching cars on a railroad siding of a cotton-seed mill at Navasota, Texas. Locomotives are available for switching purposes only once or twice daily and loading was therefore frequently delayed until their arrival when cars could be re-spotted at loading platforms. Texan longhorn steers are always at hand and have proven an efficient substitute for switch engines. Six oxen can pull 200,000 pounds or more. One prize yoke of steers, weighing 2,200 pounds each, can move a box car alone.

* * *

Consider 100-Foot Rails

German railroad officials may substitute thirty-meter (98.425 feet) rails for the fifteen-meter lengths now being used on their trunk lines. Shocks caused by rail joints would thus be reduced by one-half, thereby adding to travel comfort. Travel on German railroads is very cheap, approximating only one and one-tenth cents per mile during 1927, when two billion passengers were carried. Freight and passenger trains covered nearly four billion miles during the year.

* * *

One Family Comprises Crew

John Mead, a conductor, and his five sons, all in the employ of the Great Western Railway in Wales, comprise the crew of one of its crack trains. Two of the boys are engineman and fireman, respectively, while the other three complete the crew.

Automatic Train Control

Automatic train control has been installed on 546 track-miles of the Rock Island and is reputed to be the greatest track-mileage in the world so protected. This distance includes two operating divisions. One hundred and forty-six locomotives have been equipped with train control attachments. The system is of the contact type and is operated in conjunction with the three-position block signals. When the block signal displays a clear indication the operation of the train is left to the engineer just as if there were no train control system. If the signal indicates caution, passenger trains are slowed down to a speed of thirty miles an hour, and freight trains to twenty-five miles per hour. When the semaphore indicates stop the train is automatically brought to a stop.

* * *

N. Y. C. Erects New Enginehouse

Constantly increasing traffic has caused the New York Central to erect a new enginehouse at Harmon, N. Y., at a cost of $2,000,000. Thirty-one locomotives can be housed in the new building, which has twenty-five stalls with 120-foot track space, and six drop-pit stalls 150 feet in length. Electric jacks make it possible to replace driving wheels which work hitherto has been done at the West Albany shops. Other improvements include an electrically driven turntable, two concrete ash pits twenty feet in depth, and a modern flood lighting system.

* * *

New Process to Destroy Weeds

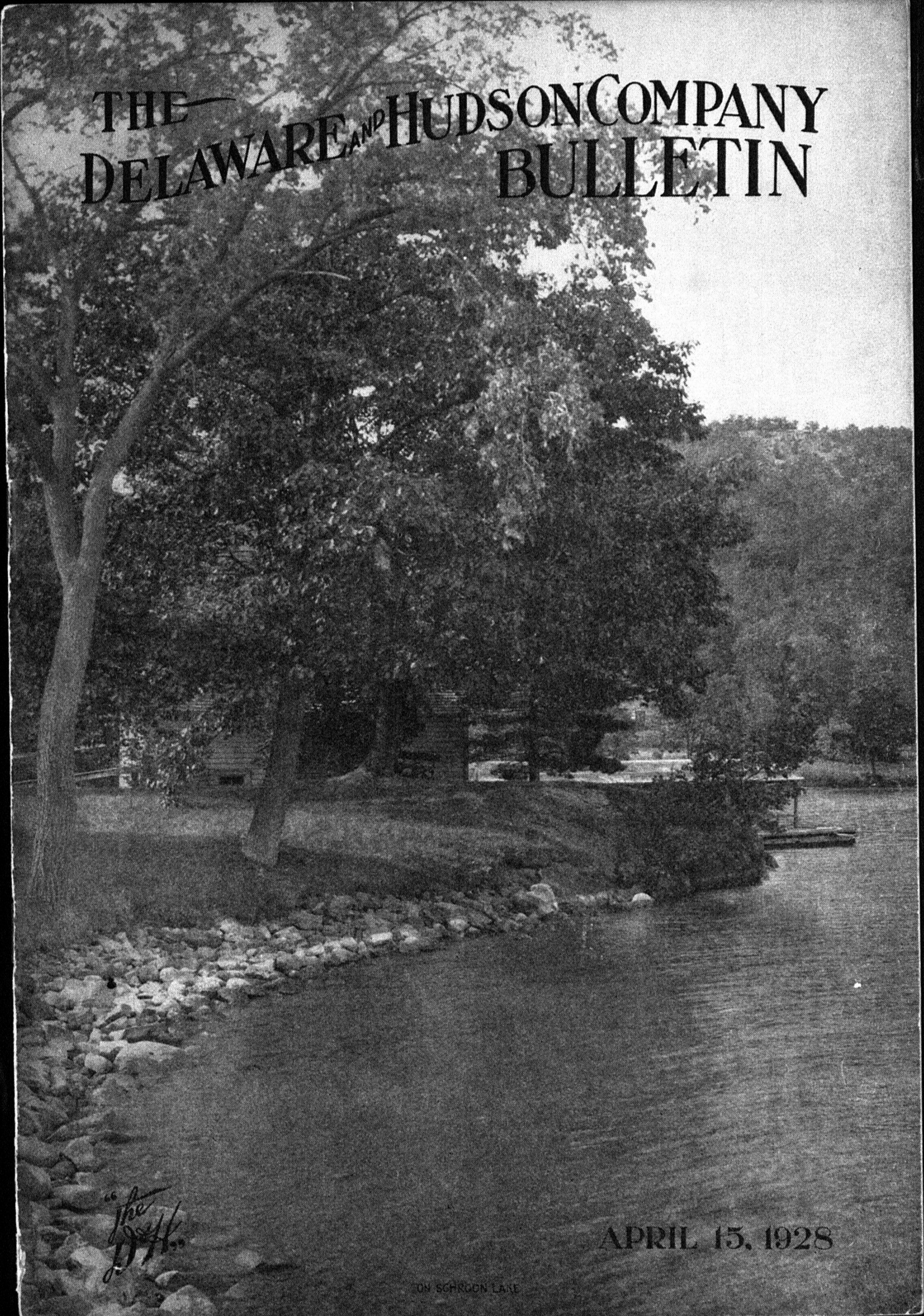
Weeds along the right of way may now be quickly destroyed by means of a device which burns them off at the roots. It consists of a car on which are two engines and two large fuel tanks. One of the engines is used to propel the car; the other creates a blast with a range sixteen feet in width which is used in burning the weeds. It will effectively destroy weeds while traveling at a speed of five miles per hour but can attain twenty miles per hour when not in operation, and therefore can be moved rapidly to clear trains or to move to another location.

Happiness Is A Gift

HAPPINESS is never an earning, it is a by-product or rather, it is a gift. It is poured into hearts prepared. I think that most of us entertain a contemptible notion of happiness. We think of it as one might of a short potato-crop — not enough to go around. Indeed, that is precisely the reason sometimes given for the unhappiness of so many people—that there is not enough happiness to supply the needs of all. Whereas, the more happiness there is the more there is likely to be. Happiness is not a fixed quantity, like the world's gold supply. Really, happiness is an infection; the more who have it the more are likely to catch it. Did you ever see one child happy with the crudest toy, and another child unhappy with arms full of toys? There are not enough toys to beget happiness. Happiness is a distillation, a reaction, a gift of hearts prepared for it.

—*Selected.*

THE DELAWARE AND HUDSON COMPANY BULLETIN



ON SCHROON LAKE

"the D&H"

APRIL 15, 1928

One Hundred and Five Years

THE DELAWARE AND HUDSON COMPANY

April 23, 1823

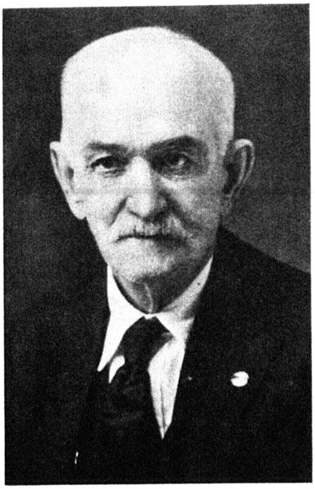
The
DELAWARE AND HUDSON COMPANY
BULLETIN

Vol. 8 Albany, N. Y., April 15, 1928 No. 8

Would Like His Job Back

Veteran Mechanicville Car Inspector Enjoyed His Work So Well That He Would Seek Reinstatement If His Strength and Rules of the Company Permitted

FATE surely metes out some strange decrees. Were it not so, the scheme of life which places a big strapping fellow back of a soda or necktie counter and a little fellow, half his size, out in a railroad yard, would be reversed, perhaps. Likewise, many cases of the slender and the stout, the beautiful and the homely, the rich and the poor, et cetera.



JAMES LYTTLE

JAMES ("SKIP") LYTTLE, of No. 23 Mabbit Street, Mechanicville, N. Y., a retired car repairer and inspector, would never have become a railroad man if size had been the sole determining factor, for he's a little fellow; well built, but little, nevertheless. Yet his record of thirty-five years and ten months of continuous service indicates that fate, as strange as its decrees may seem, did not misplace him. He was retired on April 1, 1922.

Mechanicville has always been his home. He was born at School and Railroad Streets, where his father for many years conducted a cafe, on February 28, 1853, third youngest in a family of seven children. The building afterwards was enlarged by a brother and is now the Hotel Ellsworth.

Railroad work, however, was not his first choice. Instead, his fondness for horses placed him in the employ of George Lockwood, a local liveryman, with whom he remained for fourteen years. He purchased for Mr. Lockwood, the first two-horse coach used in the village. The livery business was good in those days and the stable boasted of twelve splendid horses and vehicles for every purpose. But the day came at last when Mr. Lockwood sold out and bought a grocery business.

Store work did not offer the promise of action that he craved and so he parted company with Mr. Lockwood and turned to the railroad. Meeting the late J. H. Cowan, then the local car foreman, on the Broadway crossing one morning, he asked him for a position and was accepted without further formalities. He was put to work at once, with Bill Kerwood, in the yard close to the crossing. In those days there was a car shop, seventy-five to one hundred feet long, at the end of Mabbit Street, which housed the blacksmith shop, material racks, and the foreman's office. It was long since torn down. A roundhouse had not been built at that time and the only locomotive, a switcher, to tie up there was kept on a track between The Delaware and Hudson and Boston and Maine yards.

Later he worked in the upper yard and then in the middle yard. His aptitude for the work soon won him promotion to the position of foreman in the upper yard, although for thirty years prior to his retirement he was an inspector. He worked under Albert Patrick, who succeeded Mr. Cowan, and for D. C. GAGE, the present foreman, who followed Mr. Patrick and later was chief joint inspector which position was abolished more than a year ago.

His experience ranged from the problems presented by wooden brake beams and shoes to those common to the more modern equipment of today. He enjoys the distinction of having "put out" of the Mechanicville yard the first train equipped with air. Trains then averaged from thirty to thirty-five cars and those with air brakes were placed next to the locomotive, which practice often required a considerable amount of switching. A locomotive, as he recalls, was considered as equivalent to the braking power of seven cars.

It has always been his good fortune to be a keen observer. As a result, he is conversant with Mechanicville when the locality where he lives was farm land owned by Truman Mabbit, an early agent in the service of the Company, for whom Mabbit Street was named. As indicative of the strides which Mechanicville has made since he purchased his home some forty years ago is the fact that the street is now built in on both sides. His first school tax assessment was twenty-five cents and his last, thirty-two dollars.

Mabbit was an agent when the juncture of Park Avenue and Railroad Street was the hub of local railroad activities. His son, as he recalls, was the baggagemaster. Opposite and somewhat to the north of the station was the freight house, while on the same side and directly north was the wood shed where wood fuel for locomotives was stored and where a "big Dutchman" came from Saratoga Springs, and cut the four-foot lengths of wood in two. The water supply for locomotives was brought down from a spring on what was then known as the Seymour farm, by a lead pipe that fed a well which had been dug for storage purposes and from which the water was, in turn, pumped into an elevated tank. Such locomotives as the *Farewell* and the *Knickerbocker*, in charge of Sam McMullen, Jake Myers, or others of their day, frequently stopped there.

Like many another veteran of the service, he rues the fate that tore him away from his work. Scarcely could he have avoided it, since never during his long career did he suffer a serious accident. He would go back today, the rules of the Company permitting, if he had the strength. He says this himself.

His married life covered a period of forty years, his wife, nee Jennie Dalton, of Mechanicville, having died seven years ago. Four of their children are living and it is with a daughter, Mrs. Anna E. McGowan, that he makes his home.

He is a member of St. Paul's Roman Catholic church of Mechanicville and of The Delaware and Hudson Veterans' Association.

The Railroad as a Barometer

DID you ever think of the railroad as a barometer that indicates the trend of business and the likes and dislikes of the public. The former we know to be so as a result of fluctuations in the flow of traffic, but what of the latter? A study just completed by the Bureau of Railway Economics as to rail shipments during the past ten years, of sixteen principal fruits and vegetables grown in this country, affords us a reading which discloses a revolution in the eating habits of our people, to the extent that the consumption of fruits and vegetables by the American public is now almost twice what it was ten years ago. In the years just preceding 1920 our consumption of fresh fruits and vegetables amounted to an average of about 478,000 carloads a year. For the past three years this annual average has been 848,000 carloads, an increase of 77 per cent. Staples like potatoes, lemons, cabbage and onions have increased less than the above amount; but fresh lettuce, for instance, increased 440 per cent; grapes, 216 per cent; grapefruit, 202 per cent, and celery, 188 per cent.

From one point of view this revolution in the eating habits of the American people has taken place upon the advice of our doctors, based upon our much greater knowledge of food values. From another point, it has taken place because the railroads through their development of the refrigerator car and the quickening of rail service have abolished the necessity of relying upon one's own garden, or upon the produce of nearby territory. Today the city dweller in the northern part of the United States may be said to have his garden throughout the winter in states as far removed as Texas, California and Florida.

He: "Do you believe in the power of prayer?"

Bored Flapper: "Would if you'd gone home an hour ago."—*Exchange.*

'Twas Called A Dream

Successful Completion of the Moffatt Tunnel, One of the Greatest Engineering Feats in the History of Our Country, Recalls Its Interesting History

"THEY said it couldn't be done, but David Halliday Moffatt did it," might properly be inscribed over the portals of the recently completed Moffatt tunnel on the Denver & Salt Lake railroad, sixty miles west of Denver, Colorado. Although he died in 1911, it was his dream, a dream that cost him a fortune, caused far-seeing railroad men to look askance, and bankers to forsake him, that pointed the way to the successful accomplishment of one of the greatest engineering feats in the history of our country. If, in truth, Moffatt was a dreamer, he dreamed well as developments have proven.

To him there was nothing of a dream about the project to pierce the Continental Divide. It was something very real, practical and possessed of wonderful possibilities, despite the many obstacles, both physical and financial, that crept into the picture. He had an ambition to give Denver the advantages of a transcontinental railroad. The city had been left off the line of the Union Pacific and had suffered severely as a consequence, but had bravely recovered from its great disappointment. The slight, however, was not soon forgotten.

Moffatt was one of the city's pioneers, therefore his great desire to see it prosper. Although a native of Washingtonville, Orange County, New York, where he was born on July 22, 1839, he had adopted Denver as his home on March 17, 1860. It then was known as Denver City and had a population of not to exceed 1,200 souls. Except to return to Mechanicville, N. Y., where on December 11, 1861 he married Fannie A. Buckhout, he seldom left the city so occupied was he with mining, banking, railroad and political affairs in which he became prominent. These activities returned him a fortune estimated at from $8,000,000 to $10,000,000.

Following the Union Pacific's decision to pass up Denver, his vision of a tunnel through the Great Divide was ever with him. As an initial move to give Denver a transcontinental railroad he began the building of the Denver & Salt Lake railroad and on December 31, 1902 turned the first shovel of earth on the grade near the city. His friends believe that had he lived he would have pushed it through to Salt Lake City. At the time of his death, however, only 200 miles had been built but it has since been completed to Craig, Colorado. In this work he recognized the great need of the tunnel but, lacking funds to build it, ran his railroad over a so-called temporary route through Rollins Pass at an elevation of 11,600 feet above sea level and involving a four per cent grade for a distance of twenty-seven miles. Severest of winter conditions, particularly in the pass and at Corona—the "top of the world"—where passengers in summertime have experienced the novelty of throwing snowballs, seriously handicapped operations on this line for at least nine months of the year. In the elimination of these difficulties the tunnel is of immediate importance.

When Moffatt died, however, it was feared that the tunnel idea had passed with him, but not so. He had so imbued his friends with it that this was impossible. One effort after another to obtain money with which to carry on the work failed, but the Pueblo flood gave them the opportunity to appeal for State aid in behalf of the people of Pueblo county and this brought the support they needed so badly. Under Governor Oliver H. Shoup a tunnel commission was created and a sale of bonds authorized. Bills covering this legislation, which made it possible to finance the work with taxes paid by property holders in a so-called "Tunnel Improvement District" embracing the city of Denver and a large part of the northwestern section of the state, were passed in 1922 and by the fall of 1923 the necessary funds with which to proceed with the work had been raised. Actual construction began in September of that year, and the first train passed through the tunnel on February 26, last.

Six and two-tenths miles in length, the bore pierces the Great Divide, under James peak, at an elevation of 9,200 feet and is the longest of its kind on the North American Continent. It cost $18,000,000 and has been leased to the Denver & Salt Lake railroad for fifty years at an annual rental of from $329,660 to $536,740 for the first thirty-six years, with the privilege of extending the lease for forty-nine years or sub-letting its right to the exclusive use of the route.

Great physical obstacles were naturally encountered. Three underground rivers were uncovered in the east tunnel. Pumps with which to drain them dry had to be installed at an enormous expense. On the west side soft earth presented still another problem. Approximately 750,000 cubic yards of rock were removed; 28,000,000 kilowatt hours of electrical energy consumed in driving machinery, and, it is estimated, drill holes made in solid rock would easily total no less than 700 miles. Other data is equally as astounding.

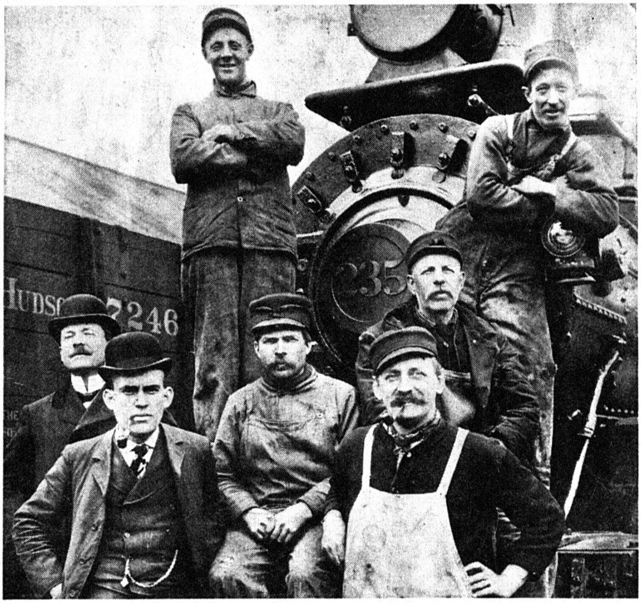
If We'd Only Pause and Think

LIFE'S trials we could soften
If we'd only pause and think;
Tears would not flow so often
If we'd only pause and think.
Our skies would all be brighter,
Our burdens would be lighter,
Our deeds would all be whiter
If we'd only pause and think.

We would not walk so blindly
If we'd only pause and think;
We would not speak unkindly
If we'd only pause and think.
Unrest we would not borrow,
Darkly clouding each tomorrow;
We could banish worlds of sorrow
If we'd only pause and think.

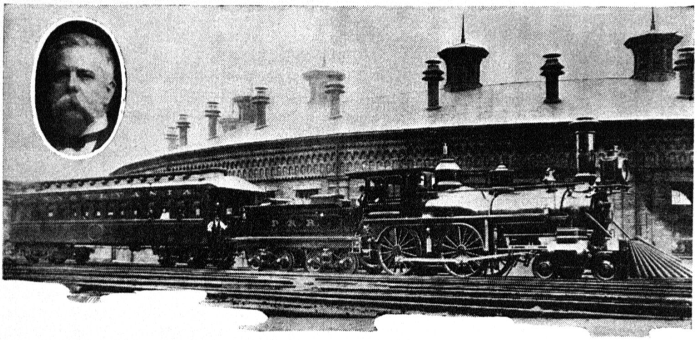
—SELECTED.

Cohoes-Waterford Crew, 1902



COURTESY H. W. SHAMBO

Those standing on the ground are Thomas Burke, Standard Oil representative; Charles W. Shambo (deceased), conductor; Fred Collier, trainman, now employed at "JA" tower, Livingston Ave., Albany; and W. C. Whish (deceased), engineman. On the pilot deck are Fred Jones, trainman on Nos. 9 and 10; Edward Fairchild, locomotive fireman, now employed in the Colonie yard; and Theodore Vanderwerken (deceased), a trainman.



First Locomotive and Coach Equipped by George Westinghouse with Compressed Air Power Brakes — 1869
(Insert) Mr. Westinghouse

Born Of A Head-on Collision

George Westinghouse, a Native of Central Bridge, Believed Mishap Could Have Been Prevented, and Thereupon Conceived the Air Brake

By W. J. COUGHTRY, *Recorder*

THE air brake, one of the greatest advances in the art of transportation, was invented and developed by George Westinghouse, a native of Delaware and Hudson territory, who was born at Central Bridge, New York, on October 6, 1846. This invention resulted from a head-on collision on the Schenectady and Troy Branch of the New York Central in 1866, which Westinghouse believed could have been avoided had proper braking power been available. His first brake, a buffer type, was soon abandoned. The second design, a chain type with a steam cylinder under the locomotive for tightening the brake chain, he discarded for a more practical type with an independent brake cylinder under each car supplied with steam from the locomotive by a continuous pipe with flexible couplings between the cars.

While at work in his shop in Schenectady on the problem of condensation of the steam, a magazine article describing the operation of rock drills worked by compressed air came to his attention and diverted his efforts to the utilization of that force for transmitting power from the locomotive to the brake mechanism on the tender and each car. Embodying his ideas in a set of drawings he applied for a patent on July 10, 1868. The first apparatus, known as the straight-air brake, which he had made in Pittsburg, was applied to a locomotive and three cars on the Pennsylvania Railroad which were first operated out of the Union station in Pittsburg in September, 1868, in the "Steubenville Accommodation" train. The successful operation of this train resulted in the grant of a patent to Westinghouse on April 13, 1869.

The accompanying photograph, reproduced by courtesy of Mr. H. H. Westinghouse, shows locomotive No. 13 and one of the six cars of the Pennsylvania Railroad which composed the train upon which the next installation of the air brake was made. This train, placed at the disposal of the Association of Master Mechanics, then in session in Pittsburg, was subjected to the most severe tests on mountain grades on the Pennsylvania between Pittsburg and Altoona and established the efficient braking control of trains by compressed air. A second successful demonstration on the Pennsylvania at Philadelphia in No-

(Turn to Page 125)

The
Delaware and Hudson Company
BULLETIN

Office of Publication :
DELAWARE AND HUDSON BUILDING,
ALBANY, N. Y.

PUBLISHED semi-monthly by The Delaware and Hudson Company, for the information of the men who operate the railroad, in the belief that mutual understanding of the problems we all have to meet will help us to solve them for our mutual welfare.

Permission is given to reprint, with credit, in part or in full, any article appearing in THE BULLETIN.

Vol. 8 April 15, 1928 **No. 8**

Where is the heart that doth not keep,
Within its inmost core,
Some fond remembrance hidden deep,
Of days that are no more?
—Ellen C. Howarth.

That Aladdin Lamp

WHAT sort of an Aladdin lamp do we possess? Twice each month a sum of money, called wages, is placed in our hands. From whence does it come? Most of us see naught but the tremendous outgo, and naturally wonder what it is that stems this flow. Other businesses, we know, derive their revenue from various related items or sources, whereas a railroad, as a carrier of freight and passengers, has but two. Just two revenue sources—freight and passenger earnings!

Railroad employes invest their labor as against Management's capital in the business in which they are jointly concerned. Considering the enormous machine, if such it may be called, needed to carry on this business, Management's investment is the larger by far and in 1926 (the last figures available) amounted to $13,652 per employe. This fact, however, should in no sense weaken the employe's proprietorial interest in the business. He should, be so deeply concerned with its success as to seriously regard it as belonging entirely to him. Our interest in the immediate and future success of The Delaware and Hudson should be of that same healthy kind.

This interest should also lead us to seriously consider our vital dependence upon the freight and passenger earnings accruing to *our* Company. It will be exercising nothing less than good judgment if we recommend *our* road to our acquaintances and patronize those merchants and other business people, who, in turn, patronize us. If by purchasing a suit of clothes, a bill of groceries or furniture, a ton of coal, or anything else, of one of our patrons, we can be assured that we have increased *our* Company's tonnage and, incidentally, its revenue, even that little, we have done no more than we owe ourselves in our own interests, individually and collectively. To go outside the circle of Delaware and Hudson patrons in transactions of this kind is but to hasten the day when we may be obliged to seek employment elsewhere because of waning revenues. This is not a threat; merely the citation of a possible natural consequence.

Let us all rub the Aladdin lamp with the oil of employe loyalty, industry and enthusiasm and the genii we crave so much will surely appear and grant our wish for continued friendly and remunerative relations.

Differences of Opinion

By GUY E. SAMPSON

A CARPENTER stopped a moment to gaze
At a freight train passing by,
He envied the brakeman who sat on top,
And as he turned they heard him sigh,
"Nothin' to do but sit and look
At the scenery whizzin' by
With an occasional stop at a water tank
When the engine gets too dry.
I wish I had taken a job like that
When I was young and spry."
The engineer said, as he gazed at the man
Who worked with the saw and plane
"Now there is a man who is far better off
Than any man on this train.
He sleeps every night 'neath the very same roof
He is home with his family each night.
That's what I call takin' pleasure in life
There's not a 'Rail' but will say that I'm right."
The blacksmith said, as he drove home a nail
In the shoe of the farmer's horse
"I wish that I owned a team like this
And a farm to work with them, of course."
But the farmer replied, as he bit off a chew
From a plug he removed from its sack
"I wished I'd learned the blacksmith trade
For with the farmers, business surely is slack."
MORAL: What's the use of kicking about
The job that we've chosen to do,
Why not do our best, then say to the rest
I never would trade jobs with you.

Despite his two billions of dollars, we have an advantage, at least, over Henry Ford on days when the income tax folk make their calls.

Never make yourself miserable, as so many people do, by regretting a decision.—From *"In Black and White."*

Stephenson and His Son

Their Notable Contributions to the Development of the Locomotive and the Railroad, As Cited by Intimate Acquaintance, Form a Most Interesting Chapter

(Continued from Last Issue)

AFTER Stephenson became engineer to the different collieries of the partnership, viz., Killingworth and Long Benton, in the County of Northumberland; and Mount Moor, Darwent Crook, and South Moor, in the county of Durham, he made several improvements in the machinery of those collieries; and, in particular, in first of all applying an underground engine, then employed to pump water, at Killingworth, to drag the coals up a sloping plane from the dip side of a downcast dyke of twenty fathoms, and this was one of the earliest engines so employed underground.

"Subsequently, an extension of the application of using fixed engines to drag the coals from the dip workings of that colliery was adopted, two other engines were applied, which, together with the original engine, conveyed the coals by sloping planes from a distance of nearly two miles, and raised the water by sliding spears from a depth of eighty-three fathoms below the level of the bottom of the pit. This was the most extensive system of engine planes underground in the trade at that time, the furthermost engine being 1,500 yards distant from the pit, the smoke of the boilers being conveyed along flues the whole distance. In the construction of those engines, and in the application of them to such operations, a mass of engineering skill, invention, and perseverance was displayed; which could only have been accomplished by a person of very superior mind, at the early age at which Stephenson performed such feats of skill.

"Stephenson also introduced the employment at Killingworth of tram-roads, with small carriages or trams, pushed by boys, on which the coals in the corves or baskets were conveyed from the extremity of the workings to the main roads, instead of ponies with sledges. A great saving of expense was thus accomplished, between the employment of ponies and sledges, and boys with trams on tram-roads. Since the introduction of round top rails, however, ponies are again universally used in preference to boys; such are the vicissitudes of improvement. I could easily adduce several cases of improvements by Stephenson in the machinery connected with the working of those collieries, but it would extend this address to a greater length than advisable; I can only, therefore, give the most important matters connected with such subjects.

"The most prominent measures which the two Stephensons have brought to perfection, and which will identify them with posterity, are Railways, Locomotive Engines, and the Safety-lamp. The two first of these have priority in point of time, but, as they have been the result of the life-time of both the Stephensons, beginning in 1813 and ending in 1859, and as the safety-lamp was an episode of a few months only in the year 1815, I shall, first of all, detail the incidents connected with the invention and perfection of the Safety-lamp by the elder Stephenson; by this arrangement the narrative of the progress of the improvements of Railways and the Locomotive Engine will not be interrupted.

"I have already stated, that George Stephenson was appointed engineer to the partnership collieries in 1812, and that some short time afterwards he applied the underground engine at Killingworth to drag the coals up a sloping drift; this plane crossed a slip dyke of twenty fathoms. In the fissure of the dyke there was a blower, or considerable discharge of the carburetted hydrogen or inflammable gas of the mine, which Stephenson passed every time he inspected the machinery of the plane. Accidents were then very frequent in the mines of Northumberland and Durham, by explosions of the inflammable gas; and as the workings of Killingworth colliery discharged more than an average quantity of gas, it was, in mining language, 'a very fiery colliery;' and as the only light then used in an inflammable mixture was the coruscations of steel from flint, by what was called the 'steel mill,' which was an exceedingly pale light, and also required a boy to work the mill for every man working by its light, and being thus exceedingly expensive, as well as being a very imperfect light, the attention of all reflective minds was directed to provide a more perfect and less expensive light.

"The repeated explosions likewise, by which numerous lives were sacrificed, and particularly an explosion at the Felling Colliery in 1812, by which ninety men and boys were lost, and a similar accident the year after at the same colliery, had, with more than usual intensity, drawn the attention of scientific men to the subject of a safety-lamp, to be used in inflammable mixtures of gas. Without troubling the Institute with unnecessary details of the labours of the various persons so devoting their time and inventive genius to this object, it is sufficient to say that Dr. Clanny, a physician of Sunderland, produced a lamp in 1813, which could be taken into an explosive mixture with impunity. Dr. Clanny insulated the flame of the lamp by water, and the surrounding air, and, of course, the inflammable air, when the lamp was placed in such a mixture, being forced through the water by a bellows, so that when an explosion did take place within the lamp it was prevented from passing outwards by the interposed water. This lamp, however, it is obvious, could not be made generally useful in working mines subject to constant discharges of gas, having, besides its size, to be attended by one person, as in the case of the steel mill, for every workman at work.

"As may be supposed from Stephenson's well known habits of thought and application, he also applied his fertile mind to the invention of a safety-lamp; and, without going into unnecessary details of all his schemes of a safety-lamp * * * I shall relate * * * the steps taken by him in the invention of the successful lamp.

"I have already stated that a blower, or considerable discharge of gas, existed in the engine plane at Killingworth Colliery, and as the fresh air passed down the drift the gas could be lighted at any time with impunity. Stephenson frequently lighted the gas, and observed when it was lighted at a distance from the exit of the blower, that the flame took a certain time to pass from where it was lighted to the aperture from which the gas issued, but, from there being a strong current of air in the drift, the flame was kept at a distance from the aperture, and when the area of the drift opposite the blower diminished, so as to produce a very strong current, the flame of the blower could be kept at a considerably farther distance from the mouth of the blower; and, that on still further diminishing the area of the drift, he could drive back the flame from the orifice until the mixture of gas with the atmospheric air was not explosive, and when, in fact, the flame became extinguished. It occurred to him then * * * that if he could produce, through a tube admitting the air into the interior of the lamp, such a current as would keep back the flame of an explosive mixture, when ignited by the flame of the lamp, in the same manner as the current of air of the drift kept back the flame of the blower from the aperture, he would have a safety-lamp.

"He found, likewise, that holding a lighted candle to windward of the lighted blower, the azotic gas from the candle had a powerful effect in extinguishing the flame, and that when he produced a quantity of azotic gas from two or three candles, he could extinguish the flame of the gas altogether. This circumstance, he also thought, might be brought to bear upon the safety of a lamp. Many were the experiments we made at this blower. We also commenced a series of experiments in my house at Killingworth with a glass receiver and pneumatic trough, to ascertain the velocity of ignited gas through small tubes. By filling the receiver with explosive gas from the pit, and inserting successively glass tubes of different diameters in the top of the receiver, and by filling the pneumatic trough, and so raising the water within the receiver by means of a cock, we could produce a current of air through the tube at the top, at any velocity we pleased. We then lighted the gas at the top of the tube, and, by experience, found that when the gas was so ignited, and a current of air produced of a certain velocity, we could keep the flame from passing downwards into the interior of the receiver, and knowing the area of the tube, and the quantity of water poured into the trough in a given time, we thus ascertained what velocity, with a given area of tube, would prevent the flame from passing downwards.

"In one of these experiments, however, we had, to us, a serious accident, which might have been more so. The experiment was going on very satisfactorily, the tube being about six inches in length above the glass receiver, and we were keeping the flame dancing up and down in it without passing into the receiver, as we poured more or less water into the trough. We did not then know that glass tubes when heated passed flame through them with more facility than when cold, and, in conducting the experiment, in an instant, the flame passed into the receiver which blew up, first to the ceiling of the house, and then fell into atoms, while we were standing alongside of it. This, however, did not deter us from continuing the experiments; the glass being very expensive we had a deal box made with windows of glass, which answered the purpose very well.

"At last a lamp was constructed with a tube in the bottom, through which the air was admitted into the interior of the lamp, and a chimney to produce sufficient draught of air, through such tube, to prevent the ignited gas from passing downwards, and with a slide to regulate the quantity of air admitted into the lamp, so as to produce a greater or less velocity, as might, by experience, be required to keep back the flame. This lamp was tried at a blower on the 21st of October, 1815. There is a very pretty story in Smiles' book of this trial, which it is almost a pity to even partially destroy, the danger, however, in reality, was not quite so great as there represented; the box, or cabin, in which the lamp was tried was not of such dimensions as would, if an explosion had taken place, have produced the effect there described, a small quantity of gas was only required, and we had had sufficient experience not to employ more gas than was necessary; at most, an explosion might have burnt the hands of the operator, but would not extend a few feet from the blower.

"The result of the trial with this lamp was, that when the slide was sufficiently closed, so that the external air, though explosive, did not, when ignited within the lamp, pass through the aperture, there was not sufficient atmospheric air admitted by such opening to support combustion, and the flame of the lamp was always extinguished. Other lamps were made, with two or three holes of the requisite dimensions, which, though the flame was extinguished when plunged into an explosive mixture, retained their light longer than the single tube lamp. It occurred to Stephenson then to use several tubes, and last of all, perforated plates, through the holes of which the explosive air was admitted to the lamp, but which did not allow the flame to repass when exploded within, and these lamps retained the light within, even when the mixture was such as to produce continuous flame, but which, after a short time, was extinguished, as Stephenson explained, by the quantity of azotic gas accummulated in the lamp.

"This was, then, a complete safety-lamp, which could be taken into an explosive mixture with impunity, the principle being, that the air was admitted through perforated orifices, so small in size that the explosion in the inside of the lamp, when an explosive mixture was admitted, did not pass outwards through such holes. In fact, it was inadvertently arriving at the discovery that explosions of carburretted hydrogen of gas would not pass through holes or tubes of a certain size.

"It is not my wish to raise up a question, which has been long set at rest, as to the claim which was at the time made by the admirers of Sir Humphrey Davy, on the one hand, that he was the first to discover this principle; and, on the other, the claim that Stephenson was the first discoverer of such principle. The almost unanimous conclusion of all persons is, that both Davy and Stephenson were original and separate discoverers of the principle, and I only now revert to it that I may add my concurrence in such a conclusion, and to shortly state the facts which have led me to such a decision.

"I have already stated, that in 1815, Stephenson had, together with myself, been making experiments with the blower at Killingworth, I may now add that in August of that year he communicated to me the principles on which he thought a safety-lamp might be constructed. In the beginning of October I made a plan of a lamp, which was given to Hogg, a tinman at Newcastle, to construct; this lamp was delivered to Stephenson on the 21st of October, and tried in the Killingworth pit on the 21st of October, 1815. I had, throughout the whole time that Stephenson was engaged in considering the various modes by which a safety-lamp might be constructed, and the principles on which such a lamp should be based, been so ultimately associated with him, that there was no step taken by him, in word, thought, or deed, with which I was not acquainted; and I can vouch, that from the period when he first directed his attention to the subject, up to the time when his lamp was tried in the mine, he had never been informed that Sir H. Davy was engaged on a similar enterprise. I am quite certain if he had, I should have been made acquainted with such a circumstance.

"His discovery was the result of the process pursued in the investigation of the principles which he thought constituted the basis of a safety-lamp, and which, as he explained, though they did not constitute, they led to the important discovery. I may add that as a testimony and reward for my part in the investigation, Mr. Stephenson presented me with a silver tankard, a facsimile of that presented to him, with the following inscription: 'Presented to Mr. Nicholas Wood, of Killingworth, by George Stephenson, as a grateful testimony of his many obligations for the indefatigable zeal and exertion displayed in assisting him to elucidate the principles, and bring to perfection the Safety-Lamp, which, under the auspices of R. W. Brandling, Esq., attained the sanction of the most respectable gentlemen of the neighbourhood. May, 1819.'

"Sir Humphrey Davy's attention having been drawn to the subject by the South Shields Committee, wrote to the Rev. Mr. Hodgson for some fire-damp, and on the 15th of October, 1815, acknowledged the receipt of the fire-damp, and on the 19th informed Mr. Hodgson that he had discovered that explosion would not pass through small tubes. The whole of the process which led to the discovery of the Davy-lamp is given at length in a pamphlet published by Sir H. Davy in 1818, and it only requires a perusal of this pamphlet to see that the process which was pursued by Sir H. Davy was essentially different from that pursued by Stephenson. The former was investigating the chemical properties of the gas, while the latter was engaged, for months previously, in investigating the mechanical effect of the inflammable air in a state of flame; first of all at the natural blower of gas, and next in its passage through small tubes; and both made the discovery almost at the same time, but by entirely different and distinct processes, that fire-damp in a state of flame would not pass through small tubes or small perforations; and it may be observed, that in both cases, the process by which they arrived at the respective conclusions, involved a considerable duration of time. The dates of the progress made by each of those gentlemen in the investigation show this most clearly; and I, therefore, arrived at the conclusion that they were parallel inventors, and that if we had not had a Davy, we would certainly have had a safety-lamp, and that if we had not had a Stephenson, we would as certainly have had a safety-lamp.

"It is scarcely necessary for me, in presenting these observations to such an Institute, to pronounce on the value of such a discovery, or to point out the merits of the two inventors. Davy had, certainly, as a thoroughly scientific man, a great advantage over Stephenson, the merit of the latter, therefore, becomes all the more meritorious by the contrast, and following so closely upon his performance of the improved Newcomen engine, and his then proceedings with regard to railways and the locomotive engine, he at once established for himself a name as a thoroughly practical man of genius and perseverance.

"While the safety-lamp experiments were going on, his son was about twelve years of age, and at school at Mr. Bruce's academy, at Newcastle-upon-Tyne.

"I must now revert back to the period when Stephenson was appointed engineer to the partnership colleries, and to the commencement of his labours on railways and the locomotive engines."

(To be continued in Next Issue)

Veterans to Meet in Wilkes-Barre

"ON to Wilkes-Barre," will be the slogan of The Delaware and Hudson Veterans' Association from now until Sunday, April 22, when its members will meet in the Savoy theater in that city, at 2 p. m., for their second regular quarterly meeting of the year. All members are urged to attend this meeting and a cordial invitation is extended to veteran employes generally, to join them. A short entertainment program is being arranged by N. S. **Burns**, a member of the executive committee for the Pennsylvania division. W. T. **Campbell**, president of the Association, will preside.

A special train will leave Albany at 6:45 a. m., for the convenience of members on the northern divisions, and will carry a dining car. Breakfast, luncheon and dinner will be of the same high order as on previous occasions and will be served at the same prices that have prevailed heretofore, i. e., fifty and seventy-five cents. The train schedule is as follows:

Leave	Albany	6:45 A. M.
	Elsmere	7:01 A. M.
	Delmar	7:04 A. M.
	Slingerlands	7:07 A. M.
	Voorheesville	7:13 A. M.
	Meadowdale	7:18 A. M.
	Altamont	7:24 A. M.
	Delanson	7:42 A. M.
	Esperance	7:49 A. M.
	Schoharie Junction	7:56 A. M.
	Central Bridge	7:58 A. M.
	Howe's Cave	8:05 A. M.
	Cobleskill	8:16 A. M.
	Richmondville	8:26 A. M.
	East Worcester	8:40 A. M.
	Worcester	8:49 A. M.
	Schenevus	8:58 A. M.
	Maryland	9:04 A. M.
	Colliers	9:13 A. M.
	Oneonta	9:25 A. M.
	Otego	9:39 A. M.
	Wells Bridge	9:47 A. M.
	Unadilla	9:55 A. M.
	Sidney	10:03 A. M.
	Bainbridge	10:10 A. M.
	Afton	10:18 A. M.
Leave	Nineveh	10:25 A. M.
	Windsor	10:49 A. M.
	Lanesboro	11:05 A. M.
	Carbondale	12:15 P. M.
	Olyphant	12:34 P. M.
	Green Ridge	12:42 P. M.
	Carbon St. Jct.	12:44 P. M.
	Hudson	1:18 P. M.
Arrive	Wilkes-Barre	1:30 P. M.

Safety First In Australia

WHILE Safety First may be considered an American institution it is fast becoming a world-wide movement. In a recent letter to J. E. LONG, superintendent of safety, C. H. Holmes, chairman of the betterment and publicity board of the Victorian Railways of Australia, tells of the work being done in the interest of Safety First in that far-away country, and in particular of the manner in which it is being conducted among the employes of the railroad whereon he is employed. All that he writes is very interesting, indeed, but space does not permit reprinting his letter.

Twenty-two safety committees, with an aggregate membership of 800, are functioning throughout the state, their work being augmented by the use of posters prepared by the National Safety Council of America, and depicting some local hazard, conspicuously displayed on bulletin boards; by pamphlets dealing with the "safe use of ladders," "artificial respiration," and relevant subjects; through employe publications, and the use of motion pictures. District committees meet every two months and the Safety Council as often as practicable, or on an average of once every two months, also.

"No accident" drives among shop employes have proven most successful. In one shop where 470 men are employed, such a campaign resulted in a complete elimination of accidents during the period. Other shops of smaller forces have done equally as well.

An effort is likewise being made to educate the public in respect to the dangers to be encountered at grade crossings (level crossings, they call them in Australia). Annual campaigns are held during which time posters especially prepared are displayed at all railway stations, grade crossings, and in garages and other business places. These are also reproduced in miniature and, together with a pamphlet of pertinent suggestions, are distributed throughout the country in an effort to bring their message to the attention of owners of motor cars and other vehicles.

And last but not least is an effort that is being made to implant Safety First truths in the minds of school children. For this purpose an active campaign is being carried on and once each month Safety bulletins are distributed to the various state, private and denominational schools, and in addition, a Safety supplement is enclosed in each issue of a school paper prepared for senior grade scholars.

Recently the National Safety Council of Australia was formed in Melbourne and is now actively engaged in endeavoring to educate the public as to the dangers associated with street intersections.

Sleep

SLEEP is the most important thing in the world, more important even than food. For we eat to sleep—but we sleep to live. Men have gone sixty-three days without food and a week without water—but they cannot last more than ten days without sleep.

"Loss of sleep, causes a form of starvation, for the food we eat is digested and transmitted into new muscle, brain, blood, and nerve-cells only while we are asleep. Endurance-racers prove this. Those engaged in six-day bicycle races and other witless forms of diversion eat four or five times as much food as does the ordinary man. Yet the end of the contest finds them hollow-eyed and cadaverous from the loss of sleep more than from the physical exertion.

"Sleep recharges the exhausted body-batteries and fills the organic furnace with fresh fuel. Sleep is a positive process—not a negative one. It isn't merely a stopping of bodily activity. It's the substitution of a constructive process for a destructive one.

"Only while we are unconscious do we fully recuperate. The deeper the sleep, the quicker the recuperation. The lighter and more disturbed the sleep, the more we need of it, the longer it takes to effect repair."—*Clinical Medicine.*

Born of a Head-on Collision

(*Continued from Page* 119)

vember, 1869, with a train of ten cars, was followed by others at Chicago and Indianapolis. The adoption of this device was so rapid that by 1875 the passenger trains of nearly all the principal roads were fully equipped with the Westinghouse air brake.

The transition from the straight-air to the automatic air brake occurred on March 5, 1872, when Westinghouse brought out the triple valve attachment. His development of the quick-acting brake in 1886, which acted instantaneously on each car upon its application, and upon each part of a train in case of accidental parting, led to its universal application to freight equipment.

It is a valuable asset in life to have happy recollections.—FROM "*In Black and White.*"

Safer Than At Home

[W. C. Cartinhour, Vice-President of the Provident Life and Accident Insurance Company, in the Chattanooga (Tenn.) Times]

WHEN the number of railway passenger trains operating throughout the United States every day is taken into consideration, and the millions of persons riding thereon as passengers, the percentage of death losses resulting from wrecks is almost nothing at all.

On the other hand, a person is daily subjected to all kinds of accidents in the home—falling down steps, chopping off fingers and toes, stepping on nails and bumping heads in dark basements, slipping on the bathroom floor, touching live wires, punching out eyes in play and suffering countless other mishaps of this character. Some of these accidents have fatal results, some produce lasting injuries and others cause only temporary pain. On the street, one runs the daily risk of being hit by an automobile, a hazard that is growing greater year by year, and, in addition to that, there are lots of other things that can happen, like being hit by flying missiles, objects dropping off buildings, falling signs and one thing and another.

The difference between these two classes of risks—those incurred while riding as passengers on trains and those involved in the daily life of the home and the street is this:

While riding on a train, a person is in the care of others who are watching out for his safety at every turn. He has attendants to help him onto and off trains, cautioning him to "watch your step"; he has conductors, brakemen and engineers to operate the train, dispatchers to keep the way open, section gangs to keep the track in good shape and many other skilled and efficient hands to look out for the safety of the train and its passengers. That accidents should occur now and then through a breakdown of some human factor is inevitable, but the fact that so many millions ride in safety every year is a tribute to the high efficiency of railroad operation.

At home and on the street, a person is, so to speak, "on his own." He has nobody to look out for his safety and well being but himself, and the fact that so many thousands of injuries occur in these ordinary accident classes every day indicates very clearly how inefficient and careless the average individual is about taking care of himself.

As a matter of fact, on board a railway train is about as safe a place as a person can be. Out of the thousands of policyholders of the Provident, residing throughout the United States and traveling about the country on business and pleasure, the company has not paid out during the past year a single death claim on a railway passenger. This is quite remarkable when it is taken into consideration that this Chattanooga company has been paying claims this year at the rate of 4,600 a month and during the year has returned to policyholders in claims an amount totaling more than $1,800,000.

The Criminal

FRANCIS CARLIN, one of the chiefs of "Scotland Yard," in his book, "Reminiscences of an Ex-Detective," gives it as a result of forty years of experience with criminals, that:

"I heartily agree with the dictum, 'Make idleness impossible, and you have done much to make the criminal impossible,' and would go so far as to say that laziness and covetousness are at the root of all crime.

"From the earliest days our forefathers seem to have been warned of these things. Consider the proverb, 'Satan finds mischief for idle hands to do,' and consider also the tenth commandment, 'Thou shalt not covet thy neighbor's house, thou shalt not covet thy neighbor's wife, nor his manservant, nor his maidservant, nor his ox, nor his ass, nor anything that is thy neighbor's.'

"Why is it that with all our experience and all the warnings we have received we lust after idleness, cultivate laziness and covetousness, and with open arms invite our own destruction?"

Punch, Brothers, Punch!

MARK TWAIN (S. L. Clemens) once was so amused by a set of instructions to conductors relative to the procedure to be followed in collecting fares, which he saw posted in a railroad car, that he transposed them so as to form a mirthful jingle which later was used in *Literary Nightmare* and was further popularized by Isaac Bromley and others. It follows:

Conductor, when you receive a fare,
Punch in the presence of the passenjare,
A blue trip slip for an eight-cent fare,
A buff trip slip for a six-cent fare,
A pink trip slip for a three-cent fare,
Punch in the presence of the passenjare!

* * *

Punch, brothers! Punch with care!
Punch in the presence of the passenjare!

Clicks from the Rails

Bridge Without Rivet or Bolt

A steel railroad bridge, built without the use of a single rivet or bolt, was officially opened to traffic by the Boston and Maine at Chicopee Falls, Mass., March 17, last. All parts were joined by an electric arc-welding process. Great savings of time and money can be realized by the use of this method of bridge building, according to officials of the Westinghouse Electric and Manufacturing company, who supervised the construction. Time which under present methods is consumed in making rivet holes and driving the rivets is saved. Practically noiseless construction also is obtained. The absence of the many rivet holes, which weaken the girders, makes it possible to build a bridge at a saving of one-third of the material ordinarily used. Some parts commonly used are entirely omitted from the structure. Painting is also made easier and more effective due to the smooth surface, free from rivets and bolts.

* * *

Salvage Dry Cell Batteries

Dead dry cell batteries which would ordinarily find their way to the junk pile are being salvaged by the Southern Pacific. A specially designed machine strips them of their zinc shells, tears off the covers and separates the contents of the container. The zinc is used in the company's shops, and the brass screws, caps and rods are sold as scrap brass. Nearly 5,000 batteries are salvaged a month and each represents a saving of three-fourths of a cent. In a year, however, this seemingly insignificant item, together with other savings, amounts to a considerable sum.

* * *

Golf Also Wrecks A Railroad

Golf, old-homewrecker or wrecker of the old home, as the case may be, is now charged with playing fast and loose with a railroad. A three-mile line to a course in a Chicago suburb is in financial difficulty because automobiles have taken its passenger business. The line was subsidized by golfers. Golf has its widows no less renowned than war, but here, perhaps, is the first railroad to be reported among the casualties.—*Nation's Business.*

Save Youths From Head-on Smash

Four youths, aged fifteen to eighteen years, desiring to go to Ottawa but lacking the necessary means of transportation, stole a gasoline motor car and started on their journey. An alert telegraph operator noticed the car speed by his station and a semaphore indicating danger, and head toward a fast freight train coming from the opposite direction. Only fifteen miles separated the train and motor car. Police officers were notified and, obtaining a locomotive, gave chase. After an exciting race the boys abandoned the motor car and took to the woods nearby. The car was removed from the tracks a few minutes before the arrival of the freight train, and all the boys were captured.

* * *

N. Y. C. Pensions 735 Veterans

Forty-four out of 735 employes pensioned by the New York Central during 1927, had over fifty years of continuous service. Eight were retired enginemen with a total service of 419 years, or an average of fify-two years and seven months each. Seven pensioned conductors had an aggregate service of 362 years and nine months, an average of fifty-one years and nine months. Forty years of service were credited to more than 319 others. To these former employes a total of $2,330,359 was paid by the company during the year, bringing up the total of pensions paid since the system was inaugurated in 1910, to nearly $17,000,000.

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Concrete Roadbed a Success

After a year of operation over a quarter-mile stretch of Pere Marquette track, laid on a concrete roadbed, it has been proven that this idea of a permanent right of way is practical. No wear or disintegration is noticeable to either rails or concrete. Trains running over this track ride more smoothly than over an ordinary roadbed. The sound of the train, while of no greater volume, differs from the familiar rumble heard on other tracks in that it has a metallic tone, due to the reflection of the sound from the hard, smooth surface underneath. There are no clicks, however, when the trucks pass over the rail joints.

Great Improvements Possible

Great improvements can be made by the railroads of the country along the lines of grade reductions, multiple tracking, elimination of curvature, construction of diversion lines around congested districts, and the extension of the use of block signals. Double and possibly triple-decking of facilities, particularly in the larger cities, were also named as possible solutions of the problems of railway expansion in the future by D. J. Brumley, chief engineer of the Chicago terminal improvements of the Illinois Central, in a talk before railway engineers in Chicago, March 6.

Electrification will continue to replace steam power in some places, he believes. It has great advantages over steam under conditions such as dense traffic, heavy grades, congested terminals, commutation service where frequent stops are made, and under covered areas.

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Don't Like Locomotive Whistles

Residents of Beverly Farms, Mass., don't like locomotive whistles, for they have asked the Boston and Maine to discontinue their use when passing through the community. They have suggested that an electric bell, instead, be installed to notify the gateman of the approach of trains and have offered to pay half the costs of installation, which will amount to approximately $1,000.

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Locomotive Bell Still Rings

Its days of usefulness at an end, the bell on the Southern Pacific's old locomotive No. 77 has been placed atop Mt. Rubidoux at Riverside, Cal., and dedicated as a landmark. Every morning a one-time pioneer, now a wealthy citizen of the community, climbs to the top of the mountain and rings the bell.

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Last Wooden Passenger Cars

Attention is called to the item "Last of Wooden Passenger Cars," which appeared on Page 111 of the last issue of *The Bulletin*, for the reason that the sums of $20,000 and $21,000 were erroneously quoted and should have been $20,000,000 and $21,000,000.

A Toast

HERE is a toast I want to drink
To a fellow I'll never know ;
To the fellow who's going to take my place
When it's time for me to go.

I've wondered what kind of a chap he'll be,
And I've wished I could take his hand,
Just to whisper, " I wish you well, old man,"
In a way that he'd understand.

I'd like to give him the cheerful word
That I've longed at times to hear !
I'd like to give him the warm handclasp
When never a friend seems near.

I've gained my knowledge by sheer hard work,
And I wish I could pass it on,
To the fellow who'll come to take my place,
Some time when I am gone.

(*Author Unknown*)